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COUNT ZEPPELIN ON BOARD LZ

COUNT ZEPPELIN

The Man and his Work

by

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Preface

THE name of Count Zeppelin has all the world over become so completely associated with the idea of the airship and aeronautics that the "Graf Zeppelin", the ship which carried its creator's name across the world, is almost identical with the man himself; "Zeppelins" simply mean airships. At most there still survives in foreign countries a faint memory that the triumph of the airship, the Zeppelin, in the face of every obstacle and persistent hostility, called for a man of exceptional faith and strength of will and character, a man arousing interest for his own sake. Such is the lot of many an inventor; the man is obliterated by his achievement.

And yet it must always be a fascinating task to trace the origins and growth of a great idea and to make the acquaintance of the man behind it. For the inventive spirit is the primary factor and it may be said generally that every major achievement, even within a specialised sphere,

presupposes a brain and character possessing unusual and attractive qualities. This is quite especially the case with Count Zeppelin; his whole personality and everything he did and strove for throughout his busy and eventful life hold our interest and are worthy of sympathetic study.

The Count's struggles on behalf of his airship have been dealt with in numerous published works. Less familiar to the world are his life before the period of his discoveries, his youth and manhood, his preliminary training as soldier and diplomat. The present book aims more particularly at adding to the reader's knowledge of this period. Although it will appeal more directly to Germans, for whom it is intended, it will also, we believe, be of interest to non-Germans and especially to English-speaking readers. The rich life-story of a great man will be appreciated wherever men's hearts beat generously and the voice of true patriotism will find a sympathetic echo in all countries in which patriotism ranks among the highest virtues.

In view of the large number of existing publications on the subject, Count Zeppelin's fight for his technical ideas, the dramatic tale of his early attempts, his failures and ultimate triumphs has

been drastically compressed in the present book. Its contents, however, are based upon Count Zeppelin's own writings and upon the author's personal recollections, and these guarantee its authenticity. There is much in it that appears in a fresh light and a great deal that is new. The book should therefore be assured of a welcome in this centenary year of the Count's birth, when the eyes of the world are again directed upon this illustrious figure.

Friedrichshafen, July 20th 1938



CHAPTER I
ORIGINS AND CHARACTER

"FERDINAND is five and a half, a little blue-eyed cherub with fair curly hair, the idol of his uncles and aunts ... Like his father, Ferdinand is *Gemütlichkeit* itself. He has not yet started real lessons, but successfully devotes his natural gifts to minding the cows, carrying wood, weeding the garden, lifting stones, etc. He is also more or less *au fait* with all agricultural work, always knows exactly in which field the farm-hands are working, is unusually interested in such things as new ploughs and seeding machines. He is even proud of being a Wurtemberger and of having just been given his first pair of boots."

This passage is taken from a frequently published letter written by Zeppelin's mother to a relative. It shows that she possessed gaiety and mental vivacity, and is a pleasure to read, if only for its delightful conversational tone and charming

humour. But it is at the same time a masterly sketch of her child by an observant mother.

Count Ferdinand von Zeppelin was the offspring of the marriage of Count Friedrich von Zeppelin with Fräulein Amélie Macaire d'Hogguer, which took place at Constance in 1834.

The Zeppelin family originally came from North Germany, — from Mecklenburg. As far back as 1286 the local records speak of a certain Heynrikus de Cepelin, and for five hundred years Zeppelins owned land and dwelt as German nobles in this largely Slav province. They were of adventurous type and, like the times in which they lived, restless, enlisting for wars in Prussia, Denmark, Sweden, England, Austria and elsewhere. Towards the end of the eighteenth century two von Zeppelin brothers, Johann Karl and Ferdinand Ludwig, migrated to South Germany and entered the service of Duke Frederick of Wurtemberg. In recognition of their useful services Johann Karl was in 1792 created an Imperial count and in 1806, when the Elector Frederick was accorded the title of King by Napoleon, Ferdinand Ludwig was made Count of Wurtemberg. The letter of investiture for the first time writes the name as

"Zeppelin", and the South German counts thereafter adopted this spelling.

The Macaires came from Geneva and were an old emigrant family of Southern French origin. Amélie's grandfather, Jacques Louis Macaire de l'Or, had been encouraged by the Emperor Joseph II to establish a calico factory on the "island" at Constance with a view to introducing the manufacture of cotton into Germany. His son married a certain Fräulein d'Hogguer of St. Gall and the issue of that union was Fräulein Amélie Macaire d'Hogguer.

When we consider Count Zeppelin's character as known in its main features to all Germans, his firm determination and practical energy combined with his mental vivacity and engaging charm, we are tempted to see in his nature a happy blend of northern qualities, acquired in the long struggle for national self-assertion, with certain more attractive southern elements. We may almost echo Goethe's words as applied to himself: "Vom Vater hab' ich die Statur, des Lebens ernstes Führen, vom Mütterchen die Frohnatur, die Lust zum fabulieren."

In the letter above quoted, we can see the little fellow visibly before us, as he busies himself with all around him and, not content with

looking on, is anxious to lend a hand and make himself useful, his curiosity being aroused — this is noteworthy — by technical objects like "new ploughs" and "seeding machines". We learn something of mother and son alike; obviously they share the same keen awareness of the small world about them, the same desire for useful co-operation. Perhaps, some may say, the mother is endowing her boy with something of the nature she recognizes in herself. "Du gleichst dem Geist, den du begreifst."*) But it is not that. Rather does this description of the little five-year-old boy reveal a characteristic which in the man appears more and more clearly as one of the most important, indeed, the most important of all, namely, the strong urge to be of use in the world. In the boy it is seen as a natural and spontaneous impulse to take some practical part in the daily work of the farm. In the man it becomes a more and more conscious and fervent sense of the duty of every man to devote all his strength to sharing in the tasks and ideals of his fellow-countrymen and of humanity in general. It is this lofty sense of duty which we find inspiring the whole future life-work of Count

*) "Thou'rt like the Spirit which thou comprehendest."

Zeppelin and which makes of him the very pattern of German manhood.

From what has so far been said it might appear that Count Zeppelin inherited the best and predominant features of his character from his vivacious mother and that the father with his slower North Mecklenburg blood contributed less to its formation. Such a conclusion, however, would be over-hasty. The letter already quoted contains these significant words: "Like his father, Ferdinand is *Gemütlichkeit* itself." The phrase describes most graphically the boy's temperament, or rather his emotional level, the degree of prudence and calm consideration which dictated to heart and brain. As it was with the boy, so, too, with the man. His powers of forethought and circumspection never deserted him, even in moments of grave crisis. And this was a legacy from his father. Count Friedrich von Zeppelin united fine sensibility with a meticulous sense of justice and rectitude. He also had aesthetic feeling, was musical, and wrote occasional verse that reveals both taste and skill. But above all else he was filled with a love for everything that is good and beautiful and sought unceasingly to inspire the same feeling in his children.

On many occasions this endeavour was touchingly acknowledged and emphasised by his famous son. Thus the latter writes from London in 1862:

"... I must add here how grateful I am to you, my dear father, for all my pleasures and enjoyments, not merely because you have placed them within my reach, but especially because it is from you alone that I have learnt the nobler aspect of so many things and thus can achieve true enjoyment, while turning my back upon things which tend to degrade the mind and destroy a feeling for what is really lovely."

Thus the ethical foundations which underlay Count Zeppelin's conduct in all situations and at all times were very definitely a gift from his father. Even in later years, he referred to the latter's judgment and counsel all weighty decisions that he was called upon to take. When quite an old man, he once said to the present writer: "Whenever I have had to examine my conscience about serious matters, I have almost invariably asked myself: 'How would your father have acted? Would he have approved what you are doing?'"

And yet no father was less prone to the harsh display of paternal authority and power. He

discharged his paternal duties with the kindness of a friend and for that reason the relation between father and son, from the beginning until the father's death when Count Zeppelin was forty-eight, was unusually close and intimate. The educative influence of his father extended not only to certain peculiarities of style (a tendency to use substantival clauses), but even to striking resemblances in the handwriting of the two men.

It was from his father that the Count derived a shy dislike for the public discussion of his life and work — a feeling which he was at length compelled to waive when public interest and curiosity grew stronger and stronger. Here is what he wrote from Ulm in 1876 to his friend and former tutor, Pastor Moser. The latter had sent the annual birthday greetings to his one-time pupil, now become famous by his mounted patrol exploit in the war and his numerous public activities, and Moser mentioned in the letter that he was proposing to publish an account of his days as tutor with the Zeppelin family. This was the Count's answer:

"My dear friend, my sincere thanks for the warm expression of your faithful affection. You still insist upon putting me to shame by the use of words

like 'thanks', 'veneration' etc., which contradict my impression of a relationship in which each side gave and received freely ...

"To me the news of your book was rather as if someone were to lift the curtains of my window to let passers-by look in — however tidy everything may be inside, the surrender to publicity is painful. It has always astonished me and many others that Bismarck should have allowed the revelation of his early days by publication of his correspondence with his family, even though the matter published doubtless served only to increase his stature. (Author's Note: This last sentence appears only in Count Zeppelin's draft of the letter and not in the fair copy). Still I soon banished the feeling of discomfort with the thought that your understanding and friendship will find a means of avoiding all offence...

"On my return home I showed the relevant part of your letter to my father, who is staying here, and found that the publication of the book would cause him real distress. He believes that a true account of our private life at Girsberg would be bound to occasion comment of all kinds, particularly, too, as consideration for the living would

preclude the addition of various explanatory details. My father is so confirmed in this view that my duty leaves me no choice but to inform you of his protest..."

Although the objection to publication is thus based upon his father's dislike, do we not all feel that the Count fully shares his father's view?

We know, of course, that every human being has a character of his own and a nature distinct from a mere mixture or sum of traits observed in his parents or grandparents. Great men especially are unique and fashioned on individual lines. Genius has a surprising way of developing in obedience to laws of its own and under conditions which remain hidden from our knowledge, issuing sometimes from an environment of what seems to us pure mediocrity. On the other hand, we are acquainted with a theory and practice of heredity and breeding and know that characteristics can be transmitted. It is always interesting and useful to trace the distinguishing traits of the family to which the subject of psychological study belongs. Such traits often bring to light features which might otherwise escape notice and which can alone explain many of our hero's acts.

From this point of view a letter is worth noting, which was written by the father to his twenty-five-year-old son in 1863, at a time when the latter was asking the paternal consent to a study tour of America. We quote the following characteristic passages from this very long letter, covering nearly eight folio pages:

"My beloved son, the suddenness with which I received the news a week ago of your proposed American tour — coming like a flash of lightning from a clear sky — was accountable for an immediate and sharp reaction against yourself and others.

"I thank you for your trust in me. In the world of to-day many a son would lack the filial piety to leave the decision to his father. But you are not one of those. Your own virtues have always lightened the duties of my father's heart, and I say it with feeling. It is a new thing for me to oppose your wishes with my own contrary opinion and to introduce into our mutual relations what may be a fresh phase.

"You are asking my permission to go to America because, from your previous experience (especially of London), you feel drawn to study the great

creative efforts of mankind, the travail and birth-pangs of the human brain, at the very heart of those operations (at that inner centre, so to speak, where the human spirit is struggling to develop the germs implanted in it by the Creator).

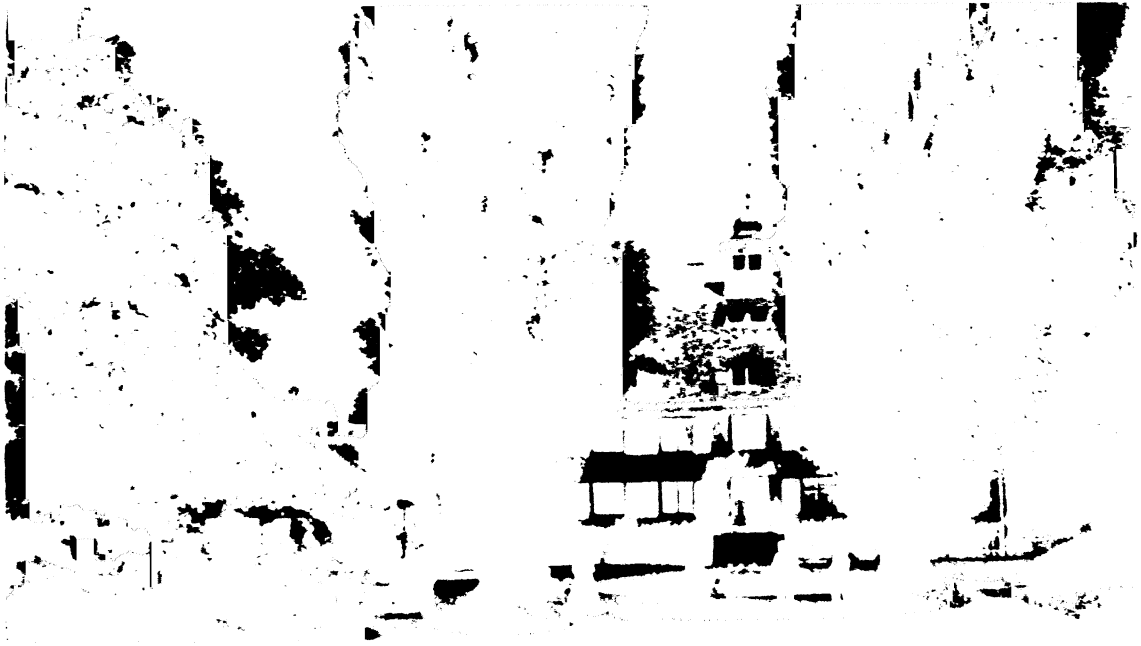
"That, if I am right, was what I may call your general wish. Your particular desire was rather a military one: you wanted to see for yourself new things that might advance your training and be of practical use in the profession you have chosen. . . .

"Believe me when I say that despite my grey hairs I am in closer sympathy with your youthful standpoint than many of the younger generation, and you will not be so unjust as to attribute my objections to philistinism, inability to keep up with the times or to understand the spirit and aspirations of youth. But the very fact that I have all my days regarded life in America as quite unworthy of admiration and sympathy and that your choice has fallen upon a country and people whom I have never placed at a high level (perhaps not high enough), since their politics and morality seemed to me to exclude them from playing a worthy part in civilisation or pursuing the divine ideal

and mission of human improvement — the fact, in short, that I could never summon up the least enthusiasm for them (a mistake on my part, perhaps) increased my astonishment, my stupor, as I have called it, and led me perhaps too far in search of arguments and warnings. I thought it my sacred duty as your father and as a man of years and experience to save you, if possible, from painful disappointment.

"With what I have called your general wish, I have in the main already dealt. I would only add one question. Will you, with all your introductions, probably worth very little over there, be able to obtain a view of the great human and political machine at work? As regards your more particular intention, I can only say, speaking as a layman, and deploring on humanitarian grounds the tragedy of a civil war, that the campaign has so far quite failed to command my admiration, perhaps because, from the reports received, it appears to have been conducted in defiance of the rules of international law....

"So now examine your own conscience and my objections once again and then answer to yourself and to me this question:



GIESBERG, CANTON OF THURGAU, SWITZERLAND

"'Am I firmly convinced that my plan will, by enlarging my knowledge and experience and enriching my mind, be of such practical benefit to me as a man, a citizen of the world and a soldier, and thus to my fatherland, that I must abide by it and put it into execution, even after weighing the attendant risks, sacrifices and dangers and the hopes that my family and my country place in me ?'

"Whatever answer you give, I shall accept.

"God be with you and your thoughts. Your loving father. Stuttgart, March 20th 1863."

It is difficult to read unmoved this revelation of a mind tormented by doubt and anxiety, a mind big and courageous enough to discern and to uphold the lofty mission entrusted to the human race and to affirm with semi-mystic faith the noble impulses that a Creator has implanted in the human soul, while recoiling in fear and misgiving before the logical consequences of his thoughts and filled with a thousand apprehensions. The son, we know, shared the father's ethical sense and high-mindedness. But what of the repressions by which the father was bound and what of that father's strongly religious bent? We may have occasion to observe that even in

these matters our own Count Zeppelin had acquired much from his father, whether by heredity or upbringing, and that the hero of the fiercely contested airship campaign possessed more native circumspection and calculating foresight than is generally supposed.

The answer to this question is simple for anyone personally acquainted with Count Zeppelin. Those, however, who knew him more intimately, or thought they did, will find the question answered, often in most unexpected fashion, in a document which the Count left behind him — his diary. This diary is a really amazing achievement, a fact, so to speak, in itself sufficient to establish its author as a quite exceptional personality. In the first place the industry and conscientiousness with which he kept it, often in obviously difficult circumstances, reveal a rare force of will and a lively sense of the duty incumbent upon him to carry through a task not lightly begun. But the entries themselves are equally remarkable. They include carefully prepared drafts of all important letters the Count wrote, long discussions on military, political and social topics, short mention of ideas and fancies that were running in his head or

quotations from those he thought best worth remembering; also moral reflections on the most diverse questions of the day, descriptions of travel, anecdotes, etc.— in fact, an extraordinary wealth of material from which it is possible to construct a complete picture of the writer's thoughts and feelings and of his life and work. He began to keep a diary in his twenty-fourth year and, with occasional breaks, continued to do so until 1917, near the end of his life. The result is a stack of thousands of large quarto pages. Most of the hand-writing is good and clear, evidence of the writer's care and extreme neatness; it becomes more hurried and falls into a kind of invented shorthand when he is obviously pressed for time. By virtue of the earnestness and conscientiousness with which he approaches all questions affecting his work and life in general, the man who kept this diary is a moral character of compelling force and one inspired by the purest and noblest of ideals. If his deeds and achievements had not already conferred upon him the patent of nobility, the diary would leave us with a permanent and shining memorial to his sterling personality.

CHAPTER II
CHILDHOOD AND YOUTH.

THE memory of his childhood and early youth remained with Count Zeppelin until old age, and from the height of his success and "happiness" he used to look back with gratitude upon those early days of care-free gaiety as a period of idyllic joy. If it be true that a man's character and whole being are conditioned to a large extent by his childhood's environment, it can be said that the circumstances in which Count Zeppelin grew to manhood were such as to stir in him every good impulse and force and to develop an harmonious personality marked by high endeavour and serious purpose. Born (on July 8th 1838) on the "island" near Constance and throughout his early days closely bound to this delightful spot by the residence there of his grandparents, he grew up amid natural surroundings which offered a constant stimulus not merely to the eye, but to the whole body. The mild climate allowed the

boy to be constantly in the open air and, with his keen senses, to study nature in wood and field or life along the quiet banks of the Rhine and on the busy lakeside. He was as interested in the doings of the fishermen and boatmen on the water as in the work of his father's farm. There were bathing, swimming, diving, sailing, riding on his pony across the fields or taking a half-playful, half-solemn share in farming operations. The parents allowed their children plenty ofopportunity for out-door games, as Count Zeppelin remembered in old age with gratitude. In this way the child grew up in touch with nature and the airship builder of later days knew what that had meant to him, both as child and as man.

Within the family circle, as indeed over the whole parental estate of Girsberg — situated on Swiss soil a quarter of an hour from Constance — there reigned a spirit of true kindliness, enveloping all its members with a warm affection. The father, a serious man with strict principles, saw to the management of his farm, conscientiously and without sparing his own effort. Economical and simple in his habits, he was a gentle kind-hearted man, with a passion for the arts. He wrote

charming poetry and played the fiddle. "He loves flowers and is a poet (and by that I do not, of course, mean a mere verse-maker)," his wife wrote of him in a letter. As for the mother, her own son says: "All who knew her praised her sweet womanliness, her kindness as well as her humour and gay spirit. She was voted a beauty, but was without a trace of coquetry and was always simple and natural in her ways." We have already made her acquaintance in the previous chapter from her letter to a sister-in-law, but I add a further extract from one which tells us much not only about herself and her playful humour, but about the relation between husband and wife and the whole atmosphere of the Count's family life. During her husband's absence from home for several weeks, the mother had been managing the whole estate and had had trouble with the staff, especially with a bailiff whom there was some question of dismissing, and she is writing of all this to her husband in a light vein. She is anxious to leave the decision in these matters until her husband's return and concludes her letter as follows: "... You must write *instanter* and either tell me that I am absolute

monarch and may act according to my convictions, even if I have to form a new cabinet (referring to the replacement of the bailiff) or, which I should infinitely prefer, allow me to postpone everything until your return, which will, I trust, not be delayed much beyond the end of this month. You will not thank me for bothering you with these nuisances as soon as ever you get home. And you are right. I would spare you them all the more gladly, since, as you know, I never take these troubles too seriously myself, and manage to get a lot of happiness out of this good old world. But, you see, matters will have to be discussed which it is rather difficult for a woman to tackle with men. So I'm sure you'll take pity on me and relieve me of them. How glad I shall be to hand back to you the reins of government! Governing is not in my line, I don't understand it and, when things go wrong, all I want is to throw my sceptre at people's heads. If only I were like other rulers and had Chambers which I could dissolve when things go wrong and I get angry! If only I could say: "Gentlemen, you are dissolved, we have no more to argue about, good-bye." But no. Even though I'm up to my

cap in difficulties, there is nothing I can dissolve, not even the difficulties themselves..."

This "best of mothers" was taken from her family all too early, when Count Zeppelin was only thirteen. From that time on the son's education passed exclusively into the hands of his more serious father and the affectionate relations between the two became the closer.

Among the fortunate circumstances surrounding Count Zeppelin's childhood were further special features that helped develop his mind and widen his experience. Round Girsberg, especially at the lower end of the lake, had settled many families of emigrés, mostly of French origin. Queen Hortense, sister-in-law of Napoleon Bonaparte and mother of Napoleon III., had lived at the Castle of Arenenberg. Most of these families were on friendly terms with the Count's parents and still more, his grandparents, and the Girsberg children, invited everywhere, came into a certain contact with the great world. Their mother used often to tell them of Prince Napoleon, who had danced at her wedding in the uniform of a Bernese captain of artillery and who once on her birthday presented her with a large bouquet

as she was driving in her carriage with the children. Such incidents naturally stirred the boy's imagination and opened for him an horizon beyond the little world of Constance. The revolutionary events of 1848 had the same effect and caused special commotion in this frontier town, where the Swiss took elaborate precautions to protect themselves against the rebels across the border. Many political opinions expressed by the man in his maturity were coloured by his childhood's experiences. This applies possibly to certain views of his on the policy of Prussia before 1866, of which we shall learn later and which are probably an unconscious echo of a popular song that left its impression on the mind of the little boy of ten:

"Da kommt der Preuß' herein
Und meint, das badische Ländle sei sein,
Gut' Nacht, gut' Nacht, gut' Nacht!"

Within his busy little world the boy, thoughtful and wide-awake, was not long in showing signs of remarkable self-reliance. He told me himself, with unmistakable pleasure, how once as a small boy of seven he undertook to tend a herd of cattle, while the cowherd went to his dinner, and how the cows strayed into the neighbouring fields.

He said to himself at once that he had only to bring back the leader of the herd and the rest would follow. But the beast obstinately eluded pursuit and kept returning to the other field. At last he succeeded in approaching the cow by a circuitous route from behind and in seizing hold of it. He then kept his grip despite the animal's bucking and brought back the whole herd into the right field.

In the same year he fell through the ice one day, and his companion ran away screaming. He succeeded in swimming to the side, but was unable to scramble up the bank, which was steep and slippery. He scolded his companion roundly for his foolish terror, told him to behave like a man, lie down on his stomach and hold out a hand to him. By this means he climbed out of the water. "My father", the Count tells us, "rebuked me for my imprudence, but was really more pleased by the way in which I had effected my own rescue." It is easy to understand that a boy of such independence should also have his share of proper pride and suffer very much in his dignity when at about this time he went on a mountain excursion with his father and had to let himself

be carried up the last stage on a stretcher to save his little legs.

The parents did everything to encourage this wish for independence and useful service. Count Zeppelin writes: "In our children's games we tried hard to excel at whatever we saw the grown-ups doing. Each had his own little garden, which he kept tidy with his own tools. I personally grew vegetables and carried my produce round on a hand-cart to sell to my relatives and our neighbours at Castell. We had our own threshing-flail adapted to our size and often worked hard and long at threshing."

Parental instruction wisely aimed first at developing the characters of the children even in their games and at arousing in them a feeling that they must make some practical contribution to the community in the form of immediately useful work. In these early days the acquisition of school-taught knowledge played a secondary part. The first lessons in reading and writing were given by a Swiss teacher at the village school. He only came twice a week and Count Zeppelin says in his favour that "he had lots to tell us children and above all knew how to play with us." He taught

them archery and how to fashion swords and shields. The young count was nine before he was entrusted to a tutor of his own, a certain Herr Kurz. Even the latter does not seem to have inspired his pupil with the necessary respect for learning. "He was a very good fellow," Count Zeppelin says, "but he did not altogether suit. He was not quite up to the mark physically and, as we ourselves were strong, athletic children, we regarded him with a certain mild contempt. Thus in the spring of 1848 I was given a stout pony with a rather stubborn temper, but one which I could do what I liked with. Herr Kurz wanted to try my pony, so with his legs reaching to the ground and looking rather like Don Quixote, he rode into Constance, where a pottery fair was being held. Before he knew what was happening, he found himself amidst flying pots and pans, the object of general ridicule. Disconsolately he led the pony back to Girsberg on foot to the unmeasured delight of us unsympathetic youngsters." So Herr Kurz, unable to command sufficient authority, had to go and enquiries were made for a successor. The choice fell in 1850 upon a young clergyman named Moser, who continued to live

for many years as tutor to the Zeppelin family and remained bound by ties of close friendship with the Count until the latter's death. The golden age of childhood was now past, an enviable and happy time spent at play, but none the less a childhood which instilled into mind and body a sense of the claims of life. We are reminded of these early days as we observe Count Zeppelin's attitude to life and its problems in adult years, approaching them seriously and dutifully, but with a warm and affectionate nature which had blossomed in the sunshine of a happy childhood and beneath the loving care of warm-hearted parents.

There is nothing remarkable to record about the achievements of the young count under Moser's tutorship. The entries in the conduct-book that the teacher was required to keep and show to the Count's father every week, include a wide variety of remarks, some highly flattering, others less so. We may take it that the young pupil was no model of perfection. Along with the seriousness and high sense of duty he inherited from his father went no doubt a certain amount of "temperament," inseparable from a man of genius and a legacy from his mother, who, as we have

seen, would have liked "to throw her sceptre at people's heads," when she was crossed. We are therefore not surprised to read in the conduct-book: "Ferdinand was naughty several times this week and actually dared to strike his teacher." Or this: "For some days now Ferdinand has been as stupid as a mule." It is amusing to see how a mischievous streak in the boy led him to feign utter stupidity before the worthy young divine. The old count occasionally indulged this whim — an extraordinarily sympathetic trait often found in really big men and contrasting agreeably with the converse attempt of would-be great men to wear an air of dignity and superiority.

On the whole, young Zeppelin was very well taught by Moser, though, as he admitted later, he missed some of the purely academic instruction he would have received at school. No doubt rightly, the main stress was laid upon the general purpose of education. Moser's influence upon his pupil in religious matters is hard to estimate. In this respect the deciding factor was doubtless the home, and especially the father, who was a devout Christian. It is interesting and rather surprising to learn that at the age of thirteen the boy wanted

to be a missionary. The Count believed in later years that he may have conceived this notion under the impression made upon him by his mother's death. Who can say? Probably his religious feeling went hand in hand with the urge of an intelligent boy's romantic imagination to find some practical expression. However, in face of his father's strong opposition, the idea was abandoned. "Perhaps it was better so," the old gentleman added quietly, when he told me about it. I had a feeling that he expected this "perhaps" to rouse emphatic contradiction and, when I smiled sceptically and said nothing, he in his turn gave a sly smile.

He would not have been a good missionary in the church's sense. All his life he was a man of deep religious feeling, but mainly in preserving a sense of awe before the unknown and a deep respect for morality as the basis of world order. This is proved by many entries in his private diary. On the other hand he disliked any narrow or dogmatic interpretation of religion, still more, any fanatical intolerance. When quite a young man, he abandoned the simple beliefs of his childhood for a freer outlook, not without inward conflict. The young lieutenant wrote to his former

tutor: "How easy it has been to speak of others, how hard now to start talking about myself. Do not be kind and call it modesty. It is really an inward reluctance to admit to oneself and others that all is not as it should be. I have become more worldly and have learnt to look at many things with new eyes. I have kept true to my main principles and my evangelical beliefs stand firm. May God help my unbelief. I am no longer quite the little Ferdy of other days." Some time earlier he wrote to his sister from the military academy: "Doing the world's work and amusing myself with my friends, I often forget the call of the spirit. At such moments I feel a need to turn my eyes inwards and to pray to be guided along the right path. It is just then, when my whole mind is bent upon a certain course that I make a point of collecting myself and praying that all I see and hear may be a blessing to me, so that I may apply it to the good of my fellow-men."

His Christianity is unmistakably shedding its metaphysical aspects in favour of ethical considerations. His truly protestant and practical religion takes the form of straight thinking and honest dealing and a corresponding sense of moral



PORTRAIT OF COUNT FERDINAND VON ZEPPELIN
IN HIS YOUTH
FROM A PAINTING BY H. SCHULZ

responsibility towards himself and the rest of humanity.

The young count was taught by Pastor Moser for nearly four years, then in 1853 was sent to the Polytechnic School at Stuttgart and two years later to the military college at Ludwigsburg. By this time he had chosen a military career. The college at Ludwigsburg was run on the lines of our cadet schools. In addition to strictly military subjects and exercises, the curriculum embraced almost everything, except the classics, taught in our secondary schools. The college was controlled by the Quartermaster-General's staff — a military administration.

The young student does not appear to have felt particularly happy in this school. Writing to his father, he says: "I cannot learn for the school's sake, I can only learn for myself." And to his sister: "Yesterday I rode over to Zuffenhausen — a glorious ride; I sang aloud for joy. After being boxed in prison for a week, the world seems so big and wonderful, you thank God for it." Obviously the boy brought up in the sunshine of Lake Constance finds it hard to adapt himself to barrack-room life and, during holidays at Girsberg,

he seeks compensation in long rambles in the Swiss countryside or along the Rhine. He was glad when the time came to leave the military academy and to be posted in September 1858 as second lieutenant with the Eighth Wurtemberg Regiment at Stuttgart. Now he can once more live and study after his own fancy. For he is not at all averse to learning and to increasing his store of knowledge, but he has his own tastes and methods. Accordingly, in October, he enters his name for one year's study at Tübingen University and starts attending lectures there. The subjects of his choice are interesting — mechanics, inorganic chemistry, political economy and history. Outside lectures, he lived the ordinary student's life, went in for riding and fencing, drank beer with the Swabian students corps, entered eagerly into the fun of carnival time and — as good young students will — lived a bit beyond his means. At the end of the winter he has to confess to his father "that, in order to put his affairs in order, he must make rather heavy demands upon the parental purse." For all his earnestness and steadiness of character, he was no bookworm, but a jolly healthy fellow who knew how to enjoy himself with his friends.

These care-free student days were cut short

by political happenings — in the spring of 1859 war broke out in Italy between France and Austria. The federal states of Southern Germany, Austria's allies, took military measures to defend themselves against surprises. Count Zeppelin was recalled to the colours. First he was posted with the engineers at the fortress of Ulm and three months later received orders to join the engineering branch of the Quartermaster-General's staff at Ludwigsburg.

Here he remained some two years, but his restless spirit and longing to see the world led him to shun the monotony of garrison life, and for the next three years we find our hero constantly on the move. His travels were mainly military study tours, undertaken for the purpose of acquainting himself with the habits and mentality of foreign countries. This carefully spent period of systematic travel marked a very important stage in Count Zeppelin's life and training. Along with much knowledge and experience he acquired that enlightened man-of-the world attitude towards all matters of general or political importance. His travel records give an account of the very varied impressions made upon him. He went to Vienna,

where he watched large-scale army manoeuvres and was introduced to the Emperor. At Trieste he visited the naval arsenal and the fleet. Thence to Venice and her art treasures and the province of Venetia, where he was struck by the strained relations between the Austrian troops and the local inhabitants. At Verona he met Benedek, the Austrian master of ordnance, but was disappointed because the conversation turned for nearly three hours "almost exclusively upon the unedifying subjects of women and horses." On the other hand, he saw "interesting exercises carried out by the engineers."

He passed on to Genoa and Marseilles, which latter presented him with his first view of a busy seaport and also first acquainted him with that doubtful and dangerous class of men who wait crouching like beasts of prey to devour their neighbours. Eventually he reaches Paris and is strongly impressed by the brilliant life of the great city.

At Compiègne he was the guest of the imperial family. The Emperor had vivid recollections of the Lake of Constance, where his mother had lived for years at Arenenberg Castle as the neighbour of the Zeppelin family. The kindness of the "gracious"

Empress enchanted the young count. He was permitted to watch the young Prince Louis at play and to please the mother by his words of praise. His excellent connections and recommendations opened all doors to him and gave access to quarters closed to more ordinary mortals. The harvest of his studies was therefore a rich one, as we see from his long travel letters to his father. Not only was he able to learn of military matters, but also to study and conscientiously report upon men and women in their everyday lives, in the streets, in church or at the theatre, in the home and as reflected in the newspapers of the countries he visited. The following passage from one of his Paris letters is amusing and further shows how seriously he regarded his studies. "In order to know the different people better, I have had to devote some of my time to women. I cannot really say whether I give the palm to the signorina with her dark eyes and splendid throat, her veil thrown over her black hair and her long pantaloons, or to the passionate French women with their charming coquetry." This, from a young man whose eyes are evidently open to feminine charms, sounds almost too cool and detached. Certain it

is that for him travel did not mean easy pleasures; he meant to learn, and he learnt.

From Paris he returned home in the spring, but by the autumn was again on the road. This time his tour included Belgium, England and Denmark. At Brussels and Antwerp he was mainly preoccupied with works of art. All the same he wrote some time later a detailed memorandum on the Antwerp defences, which he had visited in the company of a Belgian captain of artillery. In London he spent time at the Athenaeum and Army and Navy Clubs and met a number of senior officers, through whom he was invited to an inspection of the Grenadier Guards at Aldershot. With eyes open he observes the working of the British military system, and conceives the wish to study the same aspect of the Anglo-Saxon family across the seas. In the United States, where civil war had broken out between North and South, he might hope to see the militia in action.

Accordingly, on his return home he applied to the King for a year's leave in order to visit North America.

We have read in the previous chapter how his father at first raised strong objections, based on

idealistic and ethical grounds, to this wish of his son to visit the scene of war across the seas. Let us now hear the son's attitude — prompted by similar considerations — to his father's opposition. He is writing to his sister, to whom he so often confided, and strikes a real note of pathos in this passage: "... I have had to bury the idea (i. e. of a trip to America), a beautiful idea, which for a little while I loved like a bride: it inspired all I did. How eagerly did I grasp at the great ideas which puny man is able to discern in the wonders of the creation and which this first of all created things dares to conceive in his turn, as proof that he is made in God's image. How thrilled I was at the thought of seeking, even in the throes of the American civil war, the power of the divine love and its counterpart, the love implanted in all created things. I dared to hope that war, which I have chosen as the main study of my life, might be revealed to me in its bloody truth and that the phantom, before which I had hitherto quailed, might become a living reality. How eagerly I applied myself to learning English — the chief means by which I might get to know the people over there —! And now I must say

good-bye to all this." If it was to be at the cost of pain to his father, he would not go. "No gain in the world is worth that price."

This strong expression of feeling by the young man of twenty-four suggests that he must at that time have been torn by severe internal conflict. His natural instincts and his cherished wish to see the world had acquired a notable increase of depth. They had taken a philosophical, not to say mystical turn. And, true to the Zeppelin temperament, the answer to his questionings lay, not in metaphysics, but in ethics. The young man is uncertain how far the power of a benign Providence can be harmonised with the brutal facts of human life and whether man and his works can really be regarded as an effusion of the Divine Love. What is the meaning of these terrible and bloody wars? Is man even so to be looked upon as God's creature inspired by love and the Divine Will?

He has to satisfy his own conscience that the business of war, which he has chosen as his profession, can be morally justified. As we shall see later, the boy is engaged in his last decisive conflict with the simple beliefs of childhood. In the New World, where human passions and

instincts find franker and cruder expression and where war is being waged for the "ideal" of the abolition of slavery, he hopes to obtain a clearer vision of man himself. He must make the trip, for the idea "inspired all he did."

His father, as we know, had begged him to give the matter further conscientious thought. This the son does, and the father writes: ". . . I told you I wished to be better informed and that I was willing to learn. You have taught me, and have allowed me a glimpse into your soul, which was willing to sacrifice its eager and enthusiastic desires for the sake of me and my fears. That sacrifice I cannot bring myself to accept; also your memory of me, when I am gone, must be tinged with no reproach for having opposed wishes of yours which you think important for your future." On both sides there is the same touching effort to understand, to spare the other pain. But now the son's way lay open. On April 30th, 1863 he started upon his voyage, embarking upon a Cunard liner at Liverpool.

Count Zeppelin wrote a detailed account of his experiences and impressions in the United States. Here are a few passages from his story:

"With the help of the Prussian Ambassador I was soon granted an audience by President Lincoln. I had put on frock-coat and top-hat, but the occasion was void of any special ceremony. I was escorted to the President's office in the White House. There rose from behind the desk a very tall spare figure with a large head and long untidy hair and beard, exceptionally prominent cheek-bones, but wise and kindly eyes. During our short talk Mr. Reed, the private secretary, sat at the desk, while his feet, clad in Turkish slippers and projecting far beyond his trouser-ends, swung to and fro. The President expressed great pleasure at my arrival, approved my purpose and wished me a successful visit.

"Before granting the audience, he had made enquiries about me. Through the kindness of Herr von Schleiden I now hold a valuable short autograph letter addressed by President Lincoln to the Foreign Secretary and Secretary for War and asking whether the information about my person would permit the granting of my request for an army pass. This pass, allowing me to move freely among the armies of the North, was now issued to me.

"The next thing was to obtain a mount. A fine horse was secured for me by Colonel von Radewitz, a former colonel of the Prussian Guards Cavalry, who, after resigning from the Prussian service, had joined the United States army. He sold the government most of its horses and is said to have made a large fortune. Instead of the usual English saddle I selected an American wooden one of the kind used in the army. The stirrups were of Mexican design made of thick wood with a leather cap over the toe. They had the double advantage of protecting the feet against cold and preventing twigs from becoming entangled in the stirrups when riding through bush. I gave this saddle later to the Prussian War Ministry for experimental use and the results were most satisfactory.

"I proceeded by a small steamer to the army on the Potomac. There was very gay company on board, people travelling to spend Sunday with friends and relatives in the army, a curious form of social outing, I thought. Indeed social life altogether seemed to have suffered little from the war, as I had already noticed in Washington. This, no doubt, because the army was a volunteer

force and not conscripted. Dancing and gaiety on board were only momentarily suspended as we passed a ship carrying wounded men from the theatre of war.

"Headquarters consisted of a vast camp of tents pitched in long rows in a clearing of the forest. It struck me that it would be no easy matter to find my way amid this chaos of tents.

"I was introduced to the romance of war the very first day. Towards evening we heard the sound of gun-fire coming from the Rapahanok River and Captain Rasdereshin, a Russian, invited me to accompany him thither on one of his horses. It was an awe-inspiring experience for me to be plunged for my first baptism of fire into the unending forests of Virginia.

"Arriving at the field of battle, I had to resist a temptation. Shells were falling around us with some frequency and, as it was useless to expose ourselves, I ventured, at the risk of appearing afraid, to propose to the Russian that we should move aside to a spot from which we could obtain an equally good view of everything. I learnt more than once in later days that it sometimes takes more courage to run away from danger

in the presence of others than to stand one's ground.

"I was soon very well-known at headquarters, especially at the canteen bar, where visitors to camp were always cordially welcomed. I will admit that I seldom refused an invitation.

"Among the more important officers whose acquaintance I made was Lieutenant-General Butterfield, Chief of the General Staff. In civilian life he had, as postmaster-general, inaugurated the first postal service to San Francisco and his organising talents had marked him out for his present important office. In planning operations he attached especial weight to a knowledge of weather conditions. He was particularly impressed by a fine aneroid barometer of mine, for which I had paid a considerable sum in London. Having seen this instrument in my possession and borrowed it, he became so attached to it that he would keep it for longer and longer periods and finally failed to return it altogether. When I was leaving the army, I asked him over and over again to return me my barometer and at the last was so insistent that he was compelled to go to his tent to fetch it. As he was a long time absent, I followed, but

found the tent empty. He had crept out by the back and vanished with my barometer!

"One day I rode out to Fairfax Courthouse to the 11th German Division, which was under the command of General Schurz, well-known for his rescue of Gottfried Kinkels, the revolutionary.

"There was a theatrical air about Schurz. He loved to fold his cloak about him and assume an ultra-military bearing. This may have been due to a certain lack of inward assurance, for his military capacity was not quite on a par with his outward appearance. At least the German officers under his command appeared to have no very high opinion of their general's military genius. The following amusing incident seemed to me typical of the easy-going atmosphere that prevailed in this division.

"Schurz had received me very kindly and invited me to dine at the officers' mess. The conversation turning upon military operations, Schurz proceeded to outline his plans for the next few days and to air his views of the proper strategy for the Northern Army to adopt. Some way down the table sat a former Baden soldier, named Dilger, who in Germany, I believe, had not risen above the rank

of ensign, but who now commanded a battery. He had several times been in action with his guns and was distinguished for his coolness under fire, mounted upon a white horse, which had earned him the name of 'White Horse Harry'. He had a somewhat legendary reputation for courage and exploited it to criticise his superior officers. When General Schurz had concluded his oration, Dilger shouted the full length of the table: 'Surely, General, you won't do anything so stupid as that!' The remark was received with general laughter, in which Schurz was good-natured enough to join, thus closing the incident.

"One day news reached headquarters that General Lee, the commander of the Southern army, had wheeled to his left and marched in a north-westerly direction. The Potomac army received orders to cover this movement and to keep between the enemy forces and the line Washington-Philadelphia-New York. In the course of successive marches the headquarters troops had to ford a river some few hundred feet wide. While a bridge of tree-trunks was thrown over for the infantry and artillery, we rode across the stream, which was so deep in places that we had to swim. I

mention this, because it was a thing taken for granted. Even the Commander-in-Chief swam over. After a long march we reached Fairfax Courthouse in the afternoon. Here we learned that the enemy had already been reported at Manasses Gap to the north-west, and General Plaesanton, whose cavalry was some 25 miles away near Aldie, was now ordered to make a reconnaissance in strength and find out more about the enemy's dispositions. The order was to be conveyed by an officer, provided with an escort of cavalry under the command of another officer. I was given permission to accompany the party.

"It was nearly dark when we started off and, as we made our way through almost unbeaten forest tracks, you could hardly see your hand in front of you. We had to leave it to the horses to feel their way and soon found how well they did it. After a while we came to a difficult spot. Branches struck us in the face, uprooted trunks lay across the path and the beasts could hardly pick their way forward. When we rode back two days later, we learned the reason. In the darkness we had stumbled upon an ambush placed



COUNT ZEPPELIN AS ROYAL AIDE DE CAMP (1866)

in our way by the enemy and of such a kind that, had we encountered it in daylight, we should have thought it quite impossible for the horses to pass. We had to ride round it on the return journey, even in the daytime.

"We soon came up with the enemy and the cavalry of the two armies proceeded to deploy under the fire of their batteries. With loud shouts the opposing regiments approached one another at the trot and, while still some distance apart, spurred their horses to a short gallop and came to grips. After a brandishing and slashing of swords on all sides, they retired in groups, but, finding that they were not pursued, rallied quickly for a fresh attack. It was evident from the many sabre-cuts, especially head-wounds, that the engagement had been a sharp one and fought with much courage.

"I followed the attack from the extreme right flank and at one point advanced too far and found myself pursued by a troop of enemy cavalry. Fortunately my horse was faster than theirs and the revolver bullets fired at me fell short. I was much relieved, for, glad as I should have been to reach the Southern states by whatever means and there

continue my investigations, it was very possible that my captors would have shot me out of hand or strung me from a tree, although I had not drawn my sword and had in my pocket a warm letter of introduction to General Lee from his charming niece, whom I had met in Philadelphia.

"These pretty skirmishes were several times renewed until the southern forces retreated to the further bank of a small river. The artillery and infantry held the stream and fired at us across it.

"General Plaesanton with his staff now advanced to some low ground facing the enemy's position, from which he could keep watch and find a suitable place for crossing. He had sent out officers on various missions and, wishing to send another down to the river, he found that the remainder had halted some way back. Seeing his difficulty, I offered to effect the reconnaissance he wanted. I am afraid I was not strong enough to check the military enthusiasm aroused in me by my recent experiences, although as a mere spectator I had no right to perform services for either side. General Plaesanton, however, was so pleased with my active cooperation that he tried, both directly and through others, to persuade me to enter the

service of the Northerners and become his aide-de-camp."

Count Zeppelin had crossed the ocean in the hope of adding to his military knowledge and ideas. Did he achieve his object? So far as concerns their adaptability to European conditions, his purely military experiences were more or less negative. On this point one of his letters contained the following passage:

"No systematic cooperation, no local patrol work, no enemy intelligence, no general staff, no maps, no corps combining all the different arms, no tactics adapted to local topography — all these shortcomings continue even after several years of war." Tactics consisted mainly of "rides", as they were called, surprise attacks by mounted troops, often on a large scale, and these provide him with new ideas. The general opinion he formed on the basis of his personal experience was that the militia system was unsuited to European conditions.

To us and to our knowledge of the personal qualities which Count Zeppelin displayed as a soldier, both then and later, his visit to the War of Secession in America is, of course, of great

value. We learn to know him as a man of great personal courage, who even at critical moments never lost his nerve. He always said of himself that he had made a point of never exposing himself to danger recklessly or without good cause and thought any foolhardy exploits both silly and wrong. Without doubt his plans and performances were all characterised by great prudence and circumspection. At the same time he was, as America showed, a man of strong temperament, who could act impulsively when he thought it right to do so. Thus he was often led against his will to change his role of a mere observer of the fighting for that of active participant. He joined in mounted raids which took him unexpectedly into the firing line and into hand-to-hand encounters. He would plead in extenuation that on such occasions he never unsheathed his sword, but he knew quite well that the enemy would hardly have been impressed by that argument — and his bold defiance of danger remains a fact.

We must also note what the Ambassador Rudolf Schleiden said about the young count on the occasion of the latter's visit to him. He wrote in his diary at the time: "At about 3 o'clock Herr

von Davydow brought young Count von Zeppelin to see me. He seems a very intelligent young man and makes a very favourable impression. Not at all the ordinary subaltern, but remarkable for his education and knowledge of the world . . . Really an extraordinarily nice little man, with a range of interests unusual in a cavalry officer. It is his fortune to have been brought up in the country, by the Lake of Constance. The way, too, that he spoke to-day about the importance of the nobility in our day was most reasonable and liberal-minded, doing him great credit."

A truce in the military operations caused the Count to bid farewell to the army, and he joined an expedition which two Russians, accompanied by two Red Indians, were proposing to undertake into the little-known north-western parts of the country, in order, if possible, to trace the sources of the Mississippi. It was a most adventurous enterprise, but so ill-equipped that it offered small prospect of success. But it is characteristic of the young count's eager spirit that he could not resist this chance of learning something about the almost primeval parts of the American continent. Adventure for its own sake was quite

alien to his nature. For him there had always to be a meaning and purpose. Whatever he did must add to his knowledge of the world and of his fellow-men. In point of fact the expedition was more or less abortive. It meant no more than a few weeks of a trapper's existence in desert areas, involving much hardship and a constant danger of perishing from hunger and thirst. During those few weeks Count Zeppelin became so completely inured to life in the open that on his first night beneath a roof, he could not sleep and had to carry his bed out of doors. "When I awoke in the morning, I saw my two companions lying beside me, they too having been unable to endure the stuffy cabin."

The party at length reached St. Paul, where Count Zeppelin was afforded an opportunity to make his first ascent in a balloon. It is not however true that he was already at that time thinking about airships or that this ascent suggested the idea to his mind.

CHAPTER III

SOLDIER AND POLITICAL AIDE-DE-CAMP

IN November 1863 Count Zeppelin returned from America and resumed his regimental duties at home. He was however not really suited to the humdrum routine of garrison life, despite his choice of a military career, while travel had so extended his horizon and enlarged his interests that he could have derived no permanent satisfaction from the mere performance of his regimental duties. Nevertheless release was due to no steps of his own; in April 1865 he was appointed to the military staff of King Charles of Wurtemberg. At that time the staff consisted of the chief aide-de-camp, a post carrying general's rank, and four acting aides, three of whom were usually staff officers and the other a cavalry captain. Thus it was a signal honour for young Lieutenant Zeppelin to be appointed to the royal staff.

In addition to the adjutant's normal duties of preparing various matters for submission to the

royal cabinet, there were of course frequent opportunities for interviews and serious personal talks with the King, in the course of which the young officer could state his own views and even exercise some influence upon the royal decisions. It was soon apparent that the King placed considerable trust in Count Zeppelin, whose grandfather had been a familiar figure at court, and looked to him for a frank and candid expression of his opinions.

The Count wrote in his diary:

"Just back from my first dinner at the Villa. The King detained me afterwards for a stroll in the garden. He said among other things: 'I want my adjutants to belong to me heart and soul. They must mean much to me, for, having no family, I look to them in some measure to fill the gap. I talk with you as a father with his son. I hope you will so devote yourself to me as to be happiest in my vicinity, and avoid places whither I cannot follow you. Be open with me and candid — as you were yesterday. The more you give me of your heart, the more you will win mine. In any of your love-affairs confide in me, for all other matters consult Spitzemberg (the

chief aide-de-camp). He is experienced, and we have gone through much together. I may not be making myself very clear, but, when you know me better, you will understand me. Do not mind my quick brusque way of judging — I'm sound at heart. So give yourself to me wholeheartedly — perhaps that's an egoist's demand, but I cannot help it — and you'll not regret it. Don't talk to me with your brains — I've had too much of them — but from the heart.'"

These patently honest and kindly words from the King inevitably made a strong impression upon the young adjutant. This invitation to speak to his king openly was addressed to a man whose moral training had already instilled into him the duty of speaking his mind fearlessly even to those in the highest position. His office and his steady determination to serve his country and the common good gave him, he felt, the right to express his opinion freely at all times and without the least regard for his own person. Thus in this new post he gradually developed an integrity which won for him the increasing respect of a wide circle.

He was cautious at first and felt his way slowly. He was dissatisfied with much that he saw around

him. He disliked what he called the superficial and frivolous atmosphere by which the King was surrounded. He was shocked to hear the latter boast that he never read a newspaper. In this absence of contact between prince and people he saw "a danger for both, since in this way the King receives his information from a mere handful of persons and may learn nothing at all of a thousand matters that passionately concern the people as a whole." His feelings find expression in an entry in his diary on August 1st, 1865. "To-day the King and Queen are here (Ostend). The King repeatedly sent me messages of greeting — if only the good man knew me and what I think." His comments on the above-mentioned conversation with the King in the royal gardens include the following significant passage: "The King has a really kind heart. He judges men around him with extraordinary shrewdness, but within what a narrow compass his mind and feelings work! His household and the members of his entourage seem more important to him than his country and subjects . . . When he told me that he had no family but his household, I felt inclined to answer: 'Your Majesty, you

have your people.' I kept silent, not wishing to destroy by premature utterance that confidence of which I may be able to make more effective use later."

These were days of unrest and tension, especially in Wurtemberg. The thoughtful young adjutant was oppressed by their historic significance, turned over events in his mind and felt it his duty to confide his thoughts to others. Two problems particularly engaged him — the social question, which was becoming more and more threatening in every country, and the "German problem," which involved a settlement of differences between Prussia and Austria and affected the relations of Wurtemberg and the other South German states to Prussia.

The young count had a strong social sense. Paternal training, his habit from earliest days of personal cooperation with people bound together by a common purpose and useful collaboration for the general good, ruled out any class prejudices of feelings of class superiority. True, he was proud of his family and, in some ways, of his title, and he notes in his diary a thought suggested by the reading of a popular novel of the time:

"It is, however, gratifying that a poet should in these days venture to write a book appealing for justice to the nobility." About the same time, however, he made this note: "Sternberg well appreciates the worth of true nobility, which he contrasts with family escutcheons, when he says: 'Titles and escutcheons may be taken from us, nobility remains.' His meaning is made clear by words I often heard from his lips: "It is the privilege of an aristocracy to have a particularly strongly developed sense of duty towards the community." By which he means that the achievements and rank of his ancestors impose obligations upon every decent and honourable member of a family. "Noblesse oblige." And it often enraged him to see how many of his fellow aristocrats ignored those obligations. The thoughts he confided to his diary for August 1865 on the social and political movements of that day might some of them have been expressed to-day:

"The labour movements and coalitions of all kinds are undoubtedly among the most important of contemporary phenomena. The sequel to industrial liberty, laissez-faire and a maximum degree of free trade is a reaction against individual effort, which

in isolation finds itself powerless, a movement in favour of coalition and the union of workers within political and economic groups. This cooperative effort is sound and harmonises with a natural need. It aims at coordinating that which is dispersed, at attaching the individual to a corporation and to its rules, to a place, a trade, etc. through discipline, common needs, the possession of fixed or not easily movable property — its main principle is conservative.

"How is it then that this essentially healthy growth has in practice yielded such poor fruit? It should not be difficult for cultivated men, skilful orators and experienced leaders to direct along the right channels the vague efforts of the semi-educated masses. The character, worth and advantages of existing coalitions will accordingly depend upon the qualities of the men who are responsible for their formation.

"It is the sad truth that all the more conservative elements among those who are educated politically and economically are at present guilty of unpardonable inertia. They look with blind unconcern at the dangers ahead without lifting a finger to avert them. On the other hand, the

more educated section of the proletariat is in a state of revolt; upheaval promises it the gain it seeks.

"Naturally enough, therefore, the workmen's associations neglect their economic interests for the political ends they have been taught to pursue. Already the industrial worker wants no longer to be a single element in the state, but to be the sole directing power. When this has come to pass, we shall only be able to say to those now in power: 'Tu l'as voulu, George Dandin.' And yet how easy was their task. Instead of suppressing the movement, they had only to give it air and space for natural and healthy development and the mighty structure that would have arisen, would, in gratitude for those gifts, have saved them from the storm."

Zeppelin's strong personality and manly character at this time begin to be noticed. He is asked by a friend to supervise his son's education and this is the comment in his diary (November 1865):

"W. has asked me to be his son's tutor. I shall accept the post, if he approves my views as here summarised:

"In times when the heritage of the past and existing systems promised to endure, it was a duty

to acquaint oneself with the master's plan and in his spirit to add stones to the temple whose foundations he had laid. — To-day we live in an age of transition, the old order is passing, but all is confusion and uncertainty, the face of the future still hidden. The man who intends to become a useful member of modern society must cling to no institutions and, unless he feels it in him to become master of some branch of knowledge, he should not specialise. More particularly in these rationalist, sceptical times, when all is in course of change, the right man must cultivate his heart. He must not judge events from the standpoint of party or of specialised science, but try to obtain a general view of life and, by observing historical development, read eternal laws from the sum total of natural phenomena. Then can he be numbered among those who will not stand helpless and alone when the old supports collapse."

One must seek to discern "the divine purpose for the near future."

We cannot say and must even doubt whether these views greatly impressed the particular quarters to which they were addressed. We shall have something to say about this later. For the time

being political developments led him to devote his attention as the King's personal aide-de-camp mainly to the "German" question.

The problem of Schleswig-Holstein was still awaiting a final solution. The administrative partitioning between Prussia and Austria of the duchies wrested from Denmark could only serve as a temporary expedient. It was quite obviously Prussia's policy to incorporate the province in her own dominions. The pan-German representatives of the rights and interests of the German Federal Union, distrusting Prussia and opposed to an extension of her power, aimed at adding the duchies to the Union. In the South German states, and particularly in Wurtemberg, this loyalty to the federation was the political creed of almost all educated men. Count Zeppelin was in this matter still a true South German and perhaps, as was natural in his position, cherished particularist leanings towards his natal state and his King. He was thus with the majority in condemning Prussian policy. But what is strange and at first sight almost incomprehensible is the severity with which he did so. His temperament and his natural dislike of half-measures here found clear expression. From top







COUNT ZEPPELIN AS WURTEMBERG AMBASSADOR IN BERLIN (1887)

to toe and with an idealistic fixity of purpose he was a German or, shall we say, a pan-German, and he repudiated with scorn all tendencies which he thought ran counter to his ideal of an united Greater Germany. Until, therefore, the conflict between Austria and Prussia had been settled on lines and with a thoroughness which furnished an entirely new basis for the solution of the German question, he could not approve of Prussia's selfish ambitions.

In July 1865 he wrote in his diary:

"It is being repeated on all sides that no reasonable man could object if Kiel became a Prussian warport, if the sailors of the duchies were incorporated in the Prussian navy, etc. I cannot number myself among these 'reasonable' men; on the contrary, I see in the execution of these measures no advantage, but on the contrary a great danger to Germany. Anyone who wishes to add to Prussia's might at the cost of Greater Germany must necessarily believe that Prussia is able and willing to represent the general interests of Germany. That this is not so, is convincingly proved by history, especially in its latest phase. Does Bismarck's policy in the question of the duchies represent Germany's interests? . . .

"To whom will fall the lion's share in every case? To Prussia, and rightly so, for she will surely have made the largest contribution. The share accruing to her, however, will naturally be out of all proportion to this greater contribution. The creation of a Great Power associated with states of the second and lower ranks will have increasingly unfortunate and dangerous effects. . . .

"Prussia intends to seize this lion's share and bases her claim, grotesquely, upon her liberation of the duchies — after filching the right to perform this noble act from the Federal Union. She also claims that she must build a fleet to protect Germany, but her treatment of the duchies and of the Union shows that her strength really secures Prussian interests only and takes scarcely any account of the rest of Germany."

The situation grows more acute and in May 1866 we read the following indignant entry in the diary:

"Only quite recently have I turned my undivided attention to events within the Fatherland. The disastrous policy of the Prussian robbers has brought us to such a pass that the impending war seems almost better than the precarious continuance

of a state of affairs that cannot possibly last indefinitely. . . .

"The author of this Berlin policy is Count Bismarck. This man seems to have little sense of what is good and right; he has no fineness of feeling, but is brutal and ruthless. Thus equipped, he goes straight for his goal — the destruction of Austria and the establishment by force of Prussian supremacy in Germany. . . .

"To-day, accordingly, the two countries face each other armed to the teeth and war threatens to break out between the powerful confederates. It is the Union which is the main protection of the smaller federal states and which guarantees their independence. The Union exists by right, and its laws are alone binding upon its members. Those laws prescribe armed measures against any member of the Union which breaks the federal peace. Who is in this case breaking the peace? The state which fires the first shot or the one whose policy has made it inevitable that the shot should be fired? The answer is evident: it is the duty of the Union to take action against Prussia."

It is high testimony to Count Zeppelin's impartiality and perception that the man, who out

of regard for Germany's fate used such strong language against Prussia, should, as we shall see, advocate union with Prussia with the same single-minded vigour when the course of events convinced him of its expediency. On the question of means his views changed, but his end was always the same — a strong and united Germany.

CHAPTER IV

THE CAMPAIGN AGAINST PRUSSIA

WAR broke out between Prussia and the German Federation and Count Zeppelin, now a captain, was appointed to the staff of the general commanding the Wurtemberg division. The soldier in him now came into his own; not that he had a chance of commanding a unit in the field; on the other hand he gained a closer knowledge of military events and was able to form his judgment of the fighting value of the Wurtemberg contingent. That judgment was not favourable. Sharing at first the enthusiasm of the whole division, his special employment on the Quartermaster-General's staff allowed him a view of affairs both among friend and foe which convinced him of the inferior spirit and discipline of the Wurtemberg troops as compared with the Prussians. He found the cause of this in the Wurtemberg method of recruiting, by which the more intelligent and best-educated elements of the population

escaped military service. He also criticised the shortcomings of the higher command in the rearguard actions. He wrote to the King's chief aide-de-camp on July 8th that "every day for the past week he had been seventeen hours in the saddle and had only lain down to sleep for a few hours in the woods or on a rough bed." He referred to "the serious discontent among the men, whose endurance on the march was being put to an excessive strain. At Corps headquarters there prevails an air of Austrian easy-goingness and frivolity in striking contrast to the desperate seriousness of the position. Above all there is a lack of good leadership." On July 27th Count Zeppelin complains that "all the bloodshed has been in vain and through incapacity many more lives will still be wasted." He ends his letter on a gloomy note. "Thus we can choose between flight and surrender. Either, then, new commanders or — and I say it in rage and despair — for God's sake let's have peace, before thousands of lives are sacrificed to this inefficiency."

On July 30th he wrote again to the chief aide-de-camp: "I, too, am fully persuaded that no more blood should be spilt in a lost cause, but I come to a different conclusion from the War Minister's.

Our ally must, I see, be strongly urged towards peace; but if all efforts to that end are unavailing, then the honour, not merely of the army, but of the nation demands that loyalty take precedence of prudence. It then becomes our duty to renew the struggle and let those answer for the bloodshed who are the cause of it. Last night news reached us of the defection of the Baden troops and to-day we watched them march off. Despising those who went gladly and deeply sympathising with the more reluctant, we gazed after them with many a curse in our hearts for the renegades. Now the moment is not far off when the same disgrace will be on our own heads, for General von Hardegg, completely spent, has long entertained the same thoughts and, now that he has been authorised to act as he thinks best, he cannot be expected to choose any other course than follow the example of Baden. Unless this is one of those vital matters that His Majesty would wish laid before him, I appeal to you as our colleague to see that the necessary orders are issued without any delay.

"Of course the position is different if in the King's heart feelings of humanity and love for his people should prevail over the reasons

which determine the military standpoint. It would be profoundly painful for us soldiers to return ignominiously home with bowed heads, but we should honour His Majesty's motives and still cry with loyal hearts: "Long live the King!"

After what we know of Count Zeppelin's conduct in the American war, there is no need to mention that on all occasions he manifested the highest personal courage. But the following little story, told in a later letter to his father, is worth recording. He was travelling years afterwards from Berlin to East Prussia and wrote:

"The other day I was on the Baltic coast, where a battalion of the 44th Regiment was engaged in prize shooting. The colonel of the regiment told us a story which caused me to offer him my blushing thanks for a chivalrous act. In 1866 he was in command of a battalion of the 55th Regiment at Tauberbischofsheim. He told us how at that time he had watched an officer riding coolly through the vineyards, although the men of the regiment were firing at him all the time. He gave orders to respect such courage and to cease firing. Later he had made enquiries as to the officer's identity and had been told that his name was Count Zeppelin.

— I remember very well the moment when the bullets ceased to whistle about me, as I rode towards the Jägers."

The story of how Count Zeppelin was in danger of drowning in the Main is familiar.

On the day of the battle near Aschaffenburg Count Zeppelin had had orders to effect contact between the Wurtemberg division and the Hesse division on the left bank of the Main. The bridges at Aschaffenburg and Stockach were held by the enemy. After a hard ride through fierce heat, which had completely exhausted his horse, he had to dismount and swim across the river in full uniform with top-boots and heavy sword. About half-way across, his strength gave out. He was obliged to drop to the bottom, but was able to take off again and come up for air. After repeating this manoeuvre several times the Count at last succeeded in getting near enough to the bank to recover, still sitting in the water. He had to swim his way back as well.

The war was now at an end. Austria was on her knees, and Bismarck's brilliant statesmanship proceeded to settle the "German question." His method was cut-and-dried, but marked by wise

moderation. Schleswig-Holstein, Hanover, Hesse-Cassel, Nassau and Frankfurt were absorbed and the other North German states had to pay a reasonably small indemnity. The North German block was now complete. When Napoleon, too late, asked for "compensation" on German soil, Bismarck, with the armed power of Prussia and North Germany behind him, could present a scornful refusal, and Napoleon gave way. This firm policy produced a great wave of national feeling among patriotic men and women even in South Germany, and in August 1866 Bismarck succeeded in concluding a secret pact with the South German governments by which in the event of war with France their armed forces would be placed under the Prussian high command. This treaty was the foundation of the real union of Germany, but the military agreements in particular required the sanction of the federal chambers.

In Wurtemberg there was strong opposition to this "Prussianisation." The influential Democratic party, uniting with the Centre, represented this extreme "militarism" as an intolerable burden upon the people. Count Zeppelin, once, as we have seen, the bitter opponent of Bismarck, was among

the first to bow to political necessity and to the admitted greatness of the Iron Chancellor. He used his personal influence with the King and his official position as adjutant to urge indefatigably the need of closer relations with the neighbour states and with the North German union, as well as the reorganisation of the army and especially conscription.

The internal political situation in Wurtemberg grew more and more acute. The country was divided into two camps, those for whom the future and the solution of all difficulties lay in a close union of south and north under Prussian leadership, and those who wished to protect Southern Germany, especially Wurtemberg, against Prussia and its supposed reactionism and thirst for power by forming a South German Union. Party conflict raged fiercely and the vacillating King's responsible and irresponsible advisers intrigued to win him to their side. Danger threatened the constitution and even the monarchy itself. A letter written in February 1868 shows the courage with which the young adjutant implored his King to come to a clear decision in this crisis. He wrote as follows:

"On a certain unforgettable evening at your

villa Your Majesty asked me to speak to you not with my brains, but from my heart.

"My deepest feelings — gratitude, devotion and loyalty — impose upon me to-day the sacred duty of drawing Your Majesty's attention to dangers which, I am convinced, threaten the sovereignty, dignity and security of your throne.

"The unmistakable portents are only visible to those who, in addition to their gifts of understanding, are in a position to learn the views of a large class of the population.

"Your Majesty has graciously communicated to me your wishes and intentions about the negotiations with the neighbour states and the hopes which Your Majesty places in them.

"In so far as these thoughts, intended for the guidance of the ministry, have been made known, they have been greeted with joy. These wise and noble ideas have not, as they should have, formed the basis of the government's policy, but the ministers, instead of sacrificing themselves, like Your Majesty, for the sake of the cause — a frank and full union with our neighbours —, have consented to negotiate on only the most obvious matters. Wherever they saw a possible threat to

their own sphere of power, they have taken their own line and worked against an agreement. Consequently, the foreign ministers have gone away disappointed, Wurtemberg has lost the chance of influencing the detailed execution of an agreement so far merely outlined and the advantage of having reached an agreement with her neighbours on points of detail — an agreement almost essential to defeat the opposition when the bills come before parliament.

"So long as Your Majesty in the goodness of your heart believes the servile phrases of your present ministers instead of compelling them either to act strictly in accordance with Your Majesty's views or to resign, so long will confidence in the government wane, while the neighbour states and Prussia will cease to believe in the honesty of our professions. When in the next revolution the inevitable moment arrives and the survival of the dynasty is seen to depend upon the mutual trust between monarch and people and upon the faith placed in each other by states bound by the same interests, Your Majesty will experience the bitter disappointment of being deserted by all."

This astonishingly frank language, addressed by

a young adjutant to his king, appears to have made a strong impression. It led or at any rate contributed to a crisis. A few days later the young Count had a conversation with His Majesty. Its tenor is only known to us from the Count's entry in his diary. He regrets having been "too forcible and brusque, and, realising this, clumsy, not perceiving the gulf between the King's views and my own." The conversation was broken off "just as I had begun to say what I wanted." The King sent for his chief adjutant, Colonel von Spitzemberg, and angrily announced his intention to abdicate.

Upset and deeply grieved by the unexpected outcome of this talk, the Count was at first at a loss what to do. He pondered over all that he would still have wished to tell the King: "The result was so far from what I had intended! I had only made the King distrustful of himself, dissatisfied, instead of inspiring faith in his own cause and his own character."

Here is what he would have liked to add:

"If only I could have gone on to show him that he was destined to uphold the banner of true Germanism at a time when it is so gravely menaced!

After speaking so long with its heart only, the nation is now relying exclusively on its fist. Each individual has put a padlock upon his conscience and refuses all appeals to it. Oh, that a man would come and release these consciences, by showing the German people how, by relying equally upon the spiritual strength of the individual and the material forces of the community, their progress might be firm and steady. Hearts would go out in unutterable relief to such a man. You could be that man, Your Majesty, you with your character and in your capacity as regent of a purely German race, the oldest among the sovereigns of the states outside the North German Confederation."

Those words were not destined ever to be uttered, but they show how Count Zeppelin longed to see the "country of poets and thinkers" become a real nation, without losing its Germanic soul. Was it a foolish dream? If so, it was one which many earnest German thinkers shared a generation later, when they saw to their sorrow true German idealism succumbing to the spread of materialist thought among a large and influential part of the nation in an age of external might.

To-day the young Count's fears have an almost prophetic ring.

After a short period of hesitation the Count drew what seemed to him the inevitable conclusions from the position he had created. Two days after his unfortunate talk with the King, he asked to be relieved of his adjutant's post and to return to the army.

His resigned comment is touching:

"To-morrow General von Wagner will submit to His Majesty an application for my transfer either to the cavalry, as I have requested, or to the general staff. Two considerations, mainly, have prompted my request to be released. The small knowledge of military theory I have gained in the last few years does not compensate for my lack of practical experience . . . secondly, my character will suffer, if I stay too long at this post. My friends are bound to think that I am abandoning my principles, if I am seen to assent to the many things around me of which I do not approve. Finally, I am still burning to be useful. Here I now count for nothing; since unsuccessfully trying to assert myself, I have become spiritually dead. As a soldier, I hope to play my humble



COUNT ZEPPELIN AND FIELD MARSHAL COUNT HAESELER
ON IMPERIAL MANOEUVRES IN 1913

part. With luck I believe that in the field too I could do more than average well."

The King granted the petition. On March 14th he was released from his adjutancy and transferred to the Operations branch of the Quartermaster-General's staff. He received the right to bear the title and wear the uniform of a royal aide-de-camp. He therefore departed in high favour.

And the next step? Count Zeppelin would not have been the man he was, if he had not adhered to his beliefs and ideas and continued steadfastly to work for them. Since the beginning of 1868 Prussian regulations had been drastically enforced among the Wurtemberg troops, and Wurtemberg officers had been seconded for duty in Prussia, so that they could better acquaint themselves with the Prussian military machine. Count Zeppelin asked to be attached for six months to the Operations branch of the Prussian General Staff in Berlin. Here he could not only get a close view of the Prussian army, but would also learn more of the mind of a people whom many of his fellow-countrymen so strongly disliked. There, too, his distinguished personality and savoir-faire would

win for Wurtemberg some of the sympathy that was lacking in Berlin. His wish was granted and he left for Berlin at the beginning of April. It marks the opening of a new phase in his career.

CHAPTER V

INTERLUDE IN BERLIN

THE distrust felt by many Wurtembergers for Prussian might and Prussian policy was largely reciprocated in Prussia and particularly in military circles. Thus Wurtemberg officers seconded for service in Prussia had, in a sense, a political mission to fulfil and much importance was attached to their tact and general demeanour. Statements by ministers and in the semi-official Wurtemberg press had recently given fresh grounds for doubting Wurtemberg's good faith in the "German" question and, as Count Zeppelin tells us in his diary, Prussian officers openly expressed the belief that, if it suited her book, Wurtemberg would break the treaties and align herself with France. Count Zeppelin, writing from Berlin, complains that not enough heed was paid to this current of opinion: "Instead of pursuing a joint and restrained policy calculated to inspire confidence, men like Count H. are not content to protest against such views, but

run round boasting loudly of their good Swabian qualities." Personally he found Prussian officers perfectly courteous, even friendly, although he too suffered under the growing distrust of Wurtemberg loyalty. He recorded his fears and impressions in a report sent to General von Spitzemberg on May 1st, 1868. He says:

"For three weeks now I have been breathing Berlin air and imbibing Prussian ideas, yet I still feel quite sober. Indeed, there is nothing intoxicating or exalting in the cold political calculations of these men. They are not thinking of swallowing us up yet, because they cannot at present digest such a mouthful; for the present, therefore, we can rest at ease, though, of course, we cannot expect history to stand still for us. The sad part about their calculations is that they are absolutely correct, as long as we continue to pursue a petty particularist policy in association with democratic and other elements against those who are our most dangerous enemies. Inevitably we appear to be small men who, while incapable of rising to a big national idea, have nothing else to put in its place. We are rightly scorned and condemned. And yet how well and appropriately

might we uphold the purity and truth of the German national ideal, we, one of the few German states who have not been guilty of disloyalty to the Union. Has not Prussian particularism cause to blush before the patriotism of the other German states? Yet almost daily we officers have to pretend not to hear many a provocative word, or give a very feeble answer. It is true that the treaties guarantee the essentials, but we throw away their benefits, when the press, election results and even ministers' speeches make it look as if we were only awaiting a favourable moment to repudiate them. Now that the national flag is nowhere kept aloft, the Prussian standard is regarded as national, and those who will not recognize it as such, are looked upon as bad Germans, unfit to help build the history of the Fatherland. Few believe in our unconditional loyalty to the treaty; no officer believes that, if our troops were to serve in war against a foreign power, they would be of the same value as North German divisions. The efficiency of our contingents is, no doubt, underestimated, but how far is that true? Take, for instance, the vital question, to-day, of rapid mobilisation and con

centration. How can a force, for which no advance measures have been taken in these respects, compare with troops whose mobilisation, complete in every detail, awaits merely a stroke of the pen? It will be part of the duty of officers seconded here to qualify themselves to remedy some of these defects and thus narrow the accursed wedge which Prussia in 1866 drove between north and south."

Nevertheless, Count Zeppelin realised that his idealistic conception of how to bring about German unification did not accord with views held in high quarters. On November 27th, 1868 he comments in his diary on the report by the Prussian Crown Prince, "From my diary of the 1866 Campaign." He says:

"The Crown Prince's diary is simple, but of small account. Through it all runs the motto: 'Germany under the hegemony of Prussia.' It does not occur to His Royal Highness, any more than to most people here, that a Germany in that sense is for all non-Prussians an intolerable thought. Prussia's leadership must be something asked for and freely chosen, not something imposed by Prussia herself."

If we are to understand this comment, wrung, so it seems, from a deeply perturbed mind, we must know a little more of the young Count's mentality and political views. It was natural that the problem of German unification should have closely occupied him from the first. With his burning patriotism and single-minded desire to serve the community to the full extent of his powers, he was bound in these eventful years of approaching crisis to champion what he held to be the right. We have seen that he was not afraid to address even his King with unusual frankness, not to say, severity. It was in these years that he quotes in his diary the "excellent saying" of Saint Ambrose that "nothing is more dangerous before God and more painful before men than one who at the critical moment is unable to speak his full mind."

Before the Austro-Prussian war, he was, as we have seen, strongly in favour of South German separatism and opposed to Bismarckian methods, but after the war faced the facts and swung round entirely towards Bismarck and Prussia. Nevertheless, he continued true to himself in the sense that he wished, while deferring to historical fact, to

avoid undue hardship and severity. His humanity and regard for the feelings of others, despite his firmness and strong feeling, are revealed by two lines of verse he copied into his diary on the occasion of the death of the valiant fighter, David Friedrich Strauss:

"Vom Kampfe nun ruhender Geist, sympathisch verehr ich dein Streben;
Hättest du liebend geschont, flöge mein Herze dir zu."

His diary for 1867, that is, before the Berlin visit, contains the following historical reflections:

"The Reformation paralysed the physical powers of the German nation as such. It pointed the German mind inwards, it developed individualism and sowed the seeds of democracy. The individual was elevated above society, the smaller community was cultivated at the expense of the larger whole. In this way grew and developed everything of which the German people can to-day be proud, qualities so important that, despite their one-sidedness, they have made Germany the most important nation on earth — namely, a high average level of culture, deep learning, honesty and good faith. Among the qualities neglected

were a feeling for national greatness, military fame, national honour, etc. The Empire crumbled. Years of German humiliation, the universal spread of historical studies and a knowledge of contemporary events and, finally, the needs of commerce have awakened a dormant patriotism, which to-day is becoming so intense that it would fain burst its bonds. This spirit developed earlier and more powerfully in Prussia through the rise of individual leaders from time to time, who found a more favourable soil for their work among the plainsmen of the North. The latter, farther removed from the areas of conflict encountered by Teutonism in the west, and less divided in their religious beliefs, were never perhaps so strongly influenced by individualism as Rhinelanders, Franks, Swabians, etc. ... Thus, in the same Prussia, there rose once again at the critical moment in Bismarck one of those men who adopt the national solution as the only possible one"

Residence in Berlin gave Count Zeppelin the opportunity he was always looking for of adding to his experience of the world. Not merely military experience, which was of course the primary purpose of his staff appointment, but even more,

perhaps, experience of politics and world affairs. A man of genius will never confine his interests to his own field of learning, however keen a soldier he may be.

Thus Count Zeppelin, with his intense interest in national affairs, saw and learnt much in Berlin and, with his good contacts, was in his turn able to instil into others some of his own patriotic ideas. Some good seed scattered will always fall on fertile soil, though it may be difficult to estimate the effect of ideas scattered in an unstable world of conflicting notions and interests. We are tempted to attribute to such a personality as Count Zeppelin's a strong moral and political influence upon his environment, both generally and especially during the Berlin period, however much we incline to seek his real achievements and importance elsewhere. We may even be tempted to enquire which is more valuable to a country — great characters or big achievements. Be that as it may, the young Count was soon to receive high distinction and recognition from his King as a tribute to his gifts of character.

In October 1868, upon completion of his mission, Count Zeppelin should have returned to Stuttgart,

but received from his military superiors there the following official communication:

"In a letter addressed to the Royal Ministry of War on November 29th the Chief of the General Staff of the Army, His Excellency General von Moltke, spoke in high terms of your work with the Prussian General Staff between April and October of this year . . ."

Accordingly, he was at once posted to the 1st Dragoon Guards Regiment in Berlin, where he was glad to remain and pursue his study of political matters. About this time he writes to his commanding officer concerning a discussion which followed a lecture on the military position in Bavaria:

"The underlying tone (as with all Prussians who do not speak the language of pure brutality) was this: we love our German Fatherland, we love our German brethren and we ask for our feelings to be reciprocated — by which they mean blind obedience. Only Count Bismarck and a few others are more moderate in their views . . ."

No doubt the Count would have been glad to serve longer in a post which enabled him to continue his military and political studies, but his King had other plans for him.

Even before the appointment to Berlin, His Majesty had expressed a wish that the Count should accept the post of military attaché to Prince William, the heir presumptive to the Wurtemberg throne. The honour was all the greater since, as we saw, Count Zeppelin's resignation of his adjutant's post had not entirely met with the royal pleasure, while Prince William was a problem that had already caused the King some anxiety. The confused political situation in Wurtemberg was so little to the young man's liking that he quite openly expressed his desire to waive the "doubtful honour of the royal crown." He would prefer, he said, to leave the kingdom and serve in the Prussian army.

Count Zeppelin had asked for time to consider the invitation and had meanwhile sounded the prince. There is an interesting entry in the diary on this point, made in February 1869, when the King raised the matter once more. He wrote:

"My conversation with His Royal Highness in November 1868 impressed me unfavourably. The prince was unreasonably hostile to everyone and everything in Wurtemberg, adopting thereto an attitude of superiority and indifference. Thus he

claims to have "freely" decided to live anywhere but in Wurtemberg; his transfer to Prussia seems to mean to him no more than that, in glaring contradiction to the exaggerated importance which public opinion in Wurtemberg attaches to the move. Incidentally, the prince is already in trouble, for the news of his private inclinations has at once arrested further action in the direction of his desired transfer to the Prussian army."

In these circumstances the conferment upon Count Zeppelin of the post of mentor to the young prince was strong proof of the royal confidence in him. No doubt, the King relied upon the Count's personality to bring the young man to reason. Count Zeppelin obviously felt bound to respond to the appeal and, equally obviously, did all in his power to justify the hopes placed in him. His success can be measured by the affection and respect which the future King William commanded from his people as a duty-loving and unassumingly distinguished monarch, and by the lifelong friendship which developed between the King and the Count.

The Count, himself a young man of only thirty, had no easy task. Pupil and teacher, if we may

so call them, differed widely in their attitude to life. Count Zeppelin was all mental and moral vitality, strong sense of duty and burning desire to serve his country and his people. The prince, on the other hand, was at that time limp, sceptical and with no clear aim in life, "sicklied o'er with the pale cast of thought." He was happiest reading novels, and tried to forget in a world of poetic fantasy the unpleasant thoughts and feelings aroused in him by the confusion of politics. At the same time he was not at all haughty, nor was there anything bad in his character. On the contrary, he was good and gentle and was the same simple and unassuming person whom his people came to know and admire later as their king. His was a kind of Hamlet nature, which shrank from the tasks expected of it. He once made a remark to his mentor which was not only typical of the man, but creditable. "No man", he said, "by birth alone is qualified to rule over other men."

Such a view was, of course, utterly incomprehensible to Count Zeppelin, who asked nothing better than to be placed in a position to use his abilities for the common good. "It is scarcely to

be believed", he wrote on May 3rd, a month after assuming his new duties. "A strong, healthy young man of 21, with the blood of a proud princely house in his veins, destined to rule over an exceptionally gifted people — and he without the faintest sense of the glorious task to which God has called him. The prince calls it a sad fate to become king and has no interest in equipping himself for this highest of all posts. Instead of seizing every chance of making himself equal to his task and finding his highest reward therein, he contents himself with doing the indispensable minimum. . . ."

This and similar remarks afford us a vivid picture both of Count Zeppelin and of his charge and, with the same intent, we reproduce an extract from a letter written by the Count to the prince's mother, Princess Catherine of Wurtemberg.

"This is the first opportunity I have had of obeying Your Royal Highness' command to send you a report. In addition to the day's doings I can now give you a few impressions received from the intercourse I have so far had with H.R.H. . . ."

"The prince has been friendly, not towards me alone, but to most people here, with the result

that he is everywhere a welcome figure. Ceremonies of all kinds are tedious to H.R.H. and he is happiest in simple company. He seems to have no tendency towards serious excesses, but a real dislike for immorality. I am therefore glad to be able to tell you that the prince's character is a good one. It is, however, with deep regret that I must show the reverse of the medal. His temperament is not on a par with his character and everyday I see cause for sad disappointment." Then follows the sentence already quoted, which is accompanied by a long account of the prince's temperamental defects and lack of serious ambition. The letter ends:

"The prince thus thinks that he will one day refuse the proferred crown. He has, however, no other purpose in life to replace the one Providence has ordained for him. Neither in science, in art nor elsewhere does he aim at anything that may benefit his fellow-men. His attitude is entirely negative. What wonder that everything bores him!"

When fire and water mix, there is hissing and bubbling, and Count Zeppelin, it is known, left nothing undone to strike sparks out of the young prince. He writes, however, in his diary:

"I cannot even make him really angry with me, although I try hard. He merely works the harder to coax me back to good temper. If he had someone by him, who was easier to manage, or if he were alone, he would soon have little love left for me, — but he would respect me secretly!"

In his endeavours to effect a change in the prince, Count Zeppelin had no regard for his feelings and, it seems to me, showed psychological acumen, for he treated all his arguments as empty talk, telling him that he would not have the courage to carry out his professed intentions. He writes:

"I then spoke of the real reason of the prince's indifference to everything that could help him to perform his duties of regent, which was that he had no intention of discharging them. He admits no obligation in this respect: he might, he says, 'just as well not be there, die, or go mad.' Brushing these evasions aside, I questioned his courage to say when the time comes: 'I will not be king,' telling him that he had no passionate belief in his own arguments. He would therefore be unwilling to shoulder the unpleasant consequences of his refusal. I also said that he had no right at all to

decide offhand that he would not be king, but that, before upsetting the existing order of things, with serious consequences to so many people, he owed it to his conscience to study past history, present-day needs and the probable future results of his action, in order to be quite sure that his view was correct. And if he meant to abide by his decision, he should have the courage of his convictions and announce his intention at once in order that the King and the people might cease to regard him as the heir to the throne."

It is, of course, difficult to determine what effect such arguments had upon the young prince. They surely cannot altogether have failed to influence his young and impressionable mind. We know that this modern Hamlet passed through his youthful phase of pessimism and faint-heartedness and succeeded in becoming a conscientious monarch. We know also that he cherished a warm and grateful affection for Count Zeppelin until the latter's death. The whole episode anyhow throws strong light upon our hero's deeply moral and earnest character.

Conversely, the knowledge and experience acquired by Count Zeppelin during his time in Berlin

and from his work as adviser to the royal pupil, must have been extremely useful to the development of the Count's own character and to the formation of his philosophy of life. Unconsciously, he acted always on Goethe's motto: "Talent grows in back-waters, character in the main stream of life." He returned to his Swabian home riper and inwardly enriched, there to pursue the course his genius prescribed for him.

The Berlin period includes Count Zeppelin's marriage with Isabella von Wolff, of the family of Alt-Schwanenburg in Livonia, which took place in the summer of 1869.

At the time of his marriage he was thirty-one, an age which may seem comparatively late for him to wed. His looks, his social and economic position, his strong and attractive personality and the high esteem in which he was held at court and in society — all this must have made him an eligible match in the eyes of many a woman of his large acquaintance; and this lively young man with his vitality and warmth, sound and healthy in mind and heart, might have been expected to fall in love earlier.

Baroness von Wolff was not indeed Count Zep-

pelin's first love. He had already as a youth experienced what is known as an unhappy love-affair, which had consisted in a very deep attachment to one of his cousins. With his warm-hearted, eager temperament and his habit of throwing the whole of himself into everything he did, it is practically certain that this attachment was of a passionate nature. We shall find evidence that it was so. How far the girl returned his feelings is uncertain, but his suit was declined by her mother, to whom, in accordance with the custom of that day, the Count first applied. This was in 1865. The reason for the refusal is not quite clear. Some four years later he mentions the matter in his diary in these words:

"Some years ago I fell in love with a cousin on my mother's side. When I wished to propose, I was met by an insuperable obstacle in the form of her dead father's will."

It is to be presumed that the father, observing his nephew's attraction towards his daughter and opposed in principle to marriage between close kindred, forbade her in his will to marry her cousin. Whether that is so or not, the refusal of his suit came as an overwhelming blow. He was

desperate. A few weeks later he met his cousin again and wrote to her mother as follows:

"My dear aunt, the days of sweetest, yet bitter pain (at meeting) are over and the old wound is reopened. . . . At this first short meeting with A. I am sure I obeyed your wishes in betraying my inward agitation by no word or look. But, if we are to meet again for a longer time, it is my duty to tell you, dear aunt, that it would exceed my moral strength to conceal my feelings in this way. Nor is it in my nature to maintain any longer than is necessary a degree of restraint which excludes all frank and serious conversation. Do not mistake me. I should not dream of talking to A. of my love and sufferings; to plead for her love in these circumstances would be in the highest degree unscrupulous, even criminal. I would only wish to be her friend to the extent that she has granted me her friendship. You will think, perhaps, that in conversation I might be tempted to betray the warmth of my feelings. You will believe me, I am sure, when I say that there is no fear of this. I would not be guilty of this, even if I felt it to be without danger, for it is not to be expected of a strong mind like A.'s that she would allow

to spring up within her at present untroubled heart a love that was hopeless from the outset. It is because of this sad inevitability that I hope to confine the ardent love that has so long consumed me within the bounds of friendship, that love that was so strong as to inspire in me a firm belief that I could capture the fortress of A.'s heart."

The Count hid his love for his cousin deep in his breast, at any rate from others. Its warmth he most probably concealed even from her. When however, in the autumn of the following year he heard from his sister Eugenie that his beloved was about to become engaged, he was moved to the following touching outburst:

"I, poor fool, had ascribed her loss of spirits and the temporary preoccupation of which Uncle William speaks, to the departure of her sister in the first place and, to a small degree, to thoughts of me. Only now that I hear she is to be another's do I realise how I had still continued to hope. I have an irresistible wish to go and approve the fellow and advise my dear A. But how foolish that would be. The poor man must be quite exceptional to have cut me out and if I were to

be cool in my praise of him, I should be accused of jealousy . . ."

He then enters in his diary some lines of poetry that seem to him apposite to his plight.

A few days later he received official news of the engagement and wrote as follows:

"A., my A., is engaged. So she did not love me! And the news reaches me from Eugenie via Esslingen. So they did not know, did not understand that she is still everything to me! . . ."

The next day he brings himself to write his cousin a letter of congratulation, which as usual he transcribes in the diary:

"My dear cousin, I hear from Eugenie that you are engaged to be married. Well done! Frankly I would not have taken long odds on your saying 'yes'! Well done, too, my future cousin, who deserves my congratulations far more than you do, for he has captured a strong fortress, whereas you can only boast of having allowed yourself to be taken.

"Now that you have made this decision, I hope with all my heart that it will bring you happiness.

"My best wishes and congratulations to your

fiancé, whom I am anxious to know, and to all your family, from your devoted cousin."

Particularly pleasing is another letter which he copied into the same portion of the diary. He found it, he tells us, among his "trench papers", composed the evening before the first battles (at Wundheim and Tauberbischofsheim), in which he took part, and placed in his haversack, so that, should he be killed, it might be found upon his body and forwarded to its destination. It ran:

"Headquarters, Grossrinderfeld,
on the road between Tauberbischofsheim
and Würzburg,
July 22nd, 1866.

My beloved A.

I have carried your picture with me to my soldier's grave. It is the sorrow of my life that you could not be mine. Would that this assurance might remove the bitterness you feel against fate, strengthen your faith in the fine qualities with which the Creator has endowed you and awake in you a trust in the love and devotion of men. Dear A., my last request to you is that, should another seek your hand, you will not reject him without due consideration. Think seriously and

conscientiously (you could not do otherwise), but give heed also to your woman's heart. Forgive this lecture from a dead man, who asks to be cherished in your memory."

This romantic episode in the Count's emotional life was thus at an end. It had affected him deeply and was the one really strong and genuine passion of his life, such as only men of his stamp can experience. Count Zeppelin was never a man for casual love-affairs; in this respect his life was exceptionally clean. The joy and pain of this early love lingered in the recesses of his heart until late in life. In 1908, when he was on the wave of his first triumphs in airship building, Count Zeppelin, I remember, was visited by some relatives from Switzerland. Chief among them was a dear old lady, Frau F., the Count's old love. It was delightful to see the tender chivalry with which the old gentleman waited upon his guest, and the looks of affection that he gave her as they chatted. I was reminded of Horace's words:

Quo semel est imbuta recens, servabit odorem
Testa diu.

(The bouquet lingers long in the pitcher from which the wine has been poured.)

Nevertheless, time slowly exercised its healing influence upon Count Zeppelin, as it does upon all men. True, he wrote in the spring of 1869, when someone had tried to interest him in a nice girl, that "in my situation it would need of course a long time to attach myself to even the most charming of girls." In May of that year, however, his heart is once more stirred by feeling — for the cousin of his brother's wife, the Baroness von Wolff. He is at first uncertain of himself and we find a characteristic entry in his diary on May 15th, 1869:

"Look down on me with your blessing, my mother in Heaven! Let your noble spirit fill me and watch over me at this hour, when I am thinking of suing for a woman's love. May the soul of her upon whom my choice has fallen resemble your soul, may the same holy aura surround it."

It is strange that this man, who otherwise knows so exactly what he wants, who looks his king and his prince straight in the face and speaks bluntly to them, turns hesitatingly to his parents to obtain their approval of a step so intimately an affair of his own. For he writes now to his

father, giving him a character sketch of his intended bride:

". . . An extremely simple but not at all narrow mind, a fresh outlook, clear-headed, with courage and grit, a gay, kindly creature, interested and experienced in house-keeping, a pretty doe-like appearance. All these things attract me to this girl and suggest that she will make me an excellent wife, with whom I could be happy. Whether Fräulein von Wolff will accept me, I have no idea, but I think I shall shortly be asking her, and, if she doesn't say 'no', I will ask you, too, to give your assent."

Appended to the draft of this letter is an exclamatory note symptomatic of his divided mind: "So that's how things stand! God be good to me. Amen!"

The great love-affair which had shaken him to the depths, is obviously receding into the past and we find him cautiously, almost apprehensively, weighing his feelings and the step he is proposing to take. Nevertheless, the marriage, which took place late in the summer of 1869, was a really happy one, based upon mutual affection and an essential community of spirit. It developed into

a true life-companionship and one which stood the hardest tests the future held in store.

Shortly after the wedding the Count was released from his duties with Prince William and settled with his young wife at Stuttgart, where he rejoined the Quartermaster-General's staff.

CHAPTER VI

THE FRANCO-GERMAN WAR

IN July 1870 the army mobilised against France and Captain Zeppelin was attached to the staff of the Wurtemberg Cavalry Brigade under Major-General Count Scheler. Fully aware of the decisive importance which this clash with France must have for Germany's future, the Count went to the front firmly resolved, as always, to serve his country with his whole heart and soul. Providence had decreed that he should accomplish an act of personal heroism at the very outset of the campaign. This was the famous mounted patrol of Schirlenhof, which made him known to a wide circle and later to all Germany.

Much has been written about this audacious ride, which penetrated 25 miles deep into enemy territory. It is none the less interesting to hear what Count Zeppelin himself had to say about it, years later, in a lecture to the Officers' Corps of his

regiment, the Schleswig-Holstein Uhlans, No. 15. He said inter alia:

"On July 23rd I was busy arranging for the preparation and laying of mines to close the Rhine above the Maximiliansau Bridge, when at nine in the evening I received orders from the Chief of the Baden General Staff, Lieut-Col. von Lescinsky, to find out by a reconnaissance whether MacMahon's troops were preparing an attack against the Lauter and, in particular, to locate the third division of MacMahon's First Corps. . . . Cavalry had already been identified along the river. A reconnaissance in force was out of the question. Colonel von Lescinsky asked me how many officers and men I needed for my party. I asked for one officer and three men with the best mounts possible. In the early morning of July 24th, when I reached Hagenbach from Durlach, I found that I had to take with me 4 officers and 7 dragoons."

The lecturer then describes how he rushed the French sentry-post on the bridge at Lauterburg, cut the telegraph wires on the far side of the village, in order to delay news of their passage, and then pressed on over hilly ground to the west, prepared to escape with his patrol through the

Hardt mountains to the north, if he could not get through. He went on:

"It was soon ascertained that the northern edge of Hagenau Wood was occupied by only a thin line of cavalry, reinforced by weak infantry detachments at the exits from the wood. The cavalry patrolled fairly regularly between Hagenau Wood and the Lauter. The largest patrol we identified was eight horses strong. Mounted gendarmes, accompanied by single cavalry riders, brought in regular news from the villages. We captured one of these patrols near Crottweiler. My horse had lost a lot of blood from a wound and I replaced it by a police mount, but when the latter refused to jump the ditches, I had to take over a still smaller horse."

Thus the Count contented himself with an inferior mount in order not to rob his men of better horses — and this amid enemy patrols which were obviously scouring the whole area! He next told how towards evening he sent back an officer and two men to report on what had up to then been ascertained and how he bivouacked with the other men (3 officers and 5 other ranks) in a wood. He continued:

"On July 25th at dawn we moved off, avoiding villages, along the Soultz-Wörth road. French cavalry patrols were busy; we noted the change of the regiments on guard duty. The Sauerbach could only be crossed by a roadway; to avoid a big detour and to obtain further information, I decided to ride through Wörth, which according to the inhabitants was not occupied by the enemy. In the woods beyond Elsasshausen, towards eleven o'clock, the horses seemed to me too tired to face an almost inevitable encounter with the enemy on the road between Hagenau and Bitsch. The Baden officers all thought otherwise. They maintained that the horses would carry us as far as the mountains and implored me to abandon my plan of avoiding the road. I was all the more ready to give way, since I alone was badly mounted! Later on, however, they agreed that, before joining the road, we must halt for feeding and especially watering the horses. Throughout the district the only water to be found was in village wells. At that point we were near Schirlenhof, which looked like a large farm, most of the buildings of this little hamlet being hidden in trees. I decided to make the farm our resting place.

I reckoned that any cavalry detachment of superior strength to our own, which might have been warned of our presence by some local inhabitant, could not reach us for an hour. We were strong enough to deal with the normal patrols of 8 horses at most and each man had his instructions in such an event. Accordingly, my party had to be again in the saddle within the hour. To make this possible, all the horses had to be fed simultaneously. They were collected in a barn on the outskirts of the village. The horses had already been watered and their food issued, and a dish of steaming potatoes had just been brought us when the sentry gave the alarm in a voice of utmost terror. Several groups of enemy cavalry were riding into the farm at full gallop and a sharp fight at once ensued. Our first aim was to reach the horses, some eight or ten paces across the yard and after that to defend the entrances to the house. One of the first shots fatally wounded a Baden lieutenant, and two dragoons were also wounded. The French lost one non-commissioned officer killed, 3 men and 4 horses wounded. After providing for the defence of the front entrance, I ran round to the back to view the

situation there. Near the back door stood a peasant woman holding a French cavalry mount by the reins. In two seconds I was in the saddle. At the same moment Lieutenant von Wechmar rushed out of the back door, followed by two dragoons. By shouts and signs I pointed him to a stream which led through hop-fields to the wood near by. I was able to linger a minute longer unobserved, hoping that others of our party might make their escape from the house. I was however quickly spotted and set upon by a whole troop, which I did my best to lead in my pursuit, so that they might not notice Wechmar and the dragoons. Fortunately, my horse was a good one. A small thicket enabled me to shake off my pursuers, but, entering a second thicket, I saw a chasseur gallop past close ahead of me, followed by two others. They beat the wood in all directions for some time. In an hour everything was quiet. I spent altogether five hours in or near the little wood, trying to get into touch with my companions or find out what had happened to them. I then decided I must get back to the frontier to report my news, for I had already ascertained that MacMahon's divisions were echelonned between Hagenau and Bitsch. It

was a gloomy, difficult and dangerous ride. The maps upon which I had been engaged, I had left on the table. I had to avoid roads and villages, pick my way through rough wooded ground and break the cordon placed around me. A violent thunderstorm broke towards dusk and it was night before I reached Sulzthal, the home of a Quaker situated in a lonely part of the woods. Everything pointed to my spending the night there.

"The precipitous banks of the Lauter compelled me the next day to ride through the village of Niedersteinbach and for a long time to follow the Bitsch-Weissenburg road, which was strongly patrolled by the enemy. I struck the German frontier and the Bavarian advanced posts near Schönau, nearly 8 miles from Carlsruhe, which I reached in the evening of July 26th.

"I may perhaps be allowed to tell you how it was that my apparently sound calculations misled me. When we rode through Wörth, two mounted gendarmes had leapt into their saddles and sped with news of us to General Berni's at Reichshofen, who at once sent out squadrons of the 12th Chasseurs to search for us. The squadron which

included the General himself was already close to Schirlenhof when we arrived there."

Thus ended the celebrated Schirlenhof ride. Count Zeppelin returned from it alone (except for the three men sent back the first evening). He returned, as it were, with very mixed feelings, glad to be bringing the information required, grieved at the loss of his comrades. It may surprise us to-day that this ride was at the time judged very differently in military circles. The Count was especially blamed for not having exercised sufficient caution at Schirlenhof. It is also surprising that the Count's superior officers in Wurtemberg never required him to submit any report of the ride, either orally or in writing. Further, he received no decoration for it, unlike his companions, who were all awarded the Iron Cross. The reason for all this was no doubt, partly that the orders had been issued by a Baden unit, to which the Wurtemberg brigade was attached, and partly that Count Zeppelin was rumoured to have undertaken this "crazy ride, foredoomed to failure at the outset" on his own initiative. In his diary for 1895 the Count remarks that Field-Marshal Moltke himself was at first of this opinion:

"General von Zingler said after mess yesterday that he had been thinking of me as he read through his war diary. He had been serving with Moltke when the news of my ride arrived. Moltke had been annoyed at this "hot-head," believing that I had gone without orders. When Lescinsky pointed out that I had been carrying out a regular and ordered patrol, he (Zingler) had made an entry in his diary to this effect in the interests of truth."

These rumours and criticisms are the best testimony to the daring of the enterprise and to the dangers that attended it. They also testify to the courage and devotion to duty of the patrol leader, who with such calm audacity and in spite of his inferior mount carried out his mission by riding for nearly thirty miles over country closely patrolled by enemy cavalry. Whatever the military value of the information thus gained about the enemy's movements, one thing is certain: this dashing exploit at the outset of the war was an example and inspiration to others, the moral value of which it is hard to exaggerate. From certain points of view it was worth a victory in the field.

A curiosity worth recording is that the French surprise attack upon the German patrol at Schirlen-

hof Farm is glorified in French schools as a brilliant French feat of arms. During the Great War Count Zeppelin was sent a school text-book found in a French village, containing on its cover an illustration entitled "Récits patriotiques sur la guerre 1870-71, Reconnaissance de Schirlenhof 25. 7. 70" and a glowing account of the "victors" at Schirlenhof.

Count Zeppelin found many further opportunities of distinguishing himself during the war, although his comparatively humble position on the staff of a Wurtemberg cavalry brigade naturally precluded anything of major importance. He carried out his orders with forethought and courage and received various decorations. At Wörth he led with dash the advance-guard of Count Scheler's squadrons. At Sedan he showed skill and bravery in cutting a railway-line. He wrote to his wife from the battlefield a letter containing this passage:

". . . . It is splendid to have shared in the greatest day of the century; try and see it through my eyes. I rode up to the hill where the King of Prussia was standing, bathed in the last rays of the setting sun. Beneath lay the picturesque castle, the remnants of the French army locked up inside

it. The German armies formed a wide circle all round, now resting after the bloody fighting and shouting continually in triumph: "The emperor is captured!" The adjutants run around, choruses start up and the batteries thunder out world history — the greatness of Germany. The next morning, my dear, I saw the punishment of God — the defeated emperor seated before a little house and around him huge Prussian cuirassier guards, protecting rather than watching over him. God's ways are indeed wonderful!"

After Sedan Scheler's brigade moved on Paris with the rest of the Wurtemberg troops and took part in the siege. Here, too, Count Zeppelin had many chances to distinguish himself, receiving the Officers' Cross of the Saxon Order of Albert. The following little episode may be related as a typical example of Zeppelin mentality. The deadly monotony of siege life had led to a certain amount of friction between the Count and his commanding officer, arising out of questions of military competence, which at length became so disagreeable that the Count decided to resign his staff appointment. In his letter of application he complained in particular that no notice whatever had been

taken of his repeated reports on gross derelictions of duty by certain officers, who "have failed to carry out orders and have at times acted with a degree of indiscretion dangerous to the men under them". He further complained that he had often been ignored in matters affecting the safety of the service. He concludes his application with these words:

"It is certainly no business of mine to criticise my general's conduct and if I have here ventured to speak my mind, it is only in order to justify my repeated request to be relieved of a post which I can no longer reconcile either with my military or with my private character."

This letter is true Zeppelin: conscious of expending his whole personality upon the fulfilment of his every duty, he is touchy at any undeserved neglect or slight. His application was still lying signed upon his table when the French happened to make a sortie and Count Scheler, before the eyes of his staff officer, showed admirable calm and presence of mind under very heavy fire. Count Zeppelin was so stirred that he tore up his letter in order not to "trouble" the commander who had thus won his respect. Instead,

he asked for a personal interview, which successfully restored their good relations.

The "Emperor's proclamation" at Versailles, on January 18th, 1871, was, of course, greeted by Count Zeppelin with joyful enthusiasm as marking the long-awaited union of the German races within a powerful empire. True, he was not altogether pleased with the manner of its accomplishment, for he considered that not enough heed had been given to the wishes and interests of the weaker states, especially Wurtemberg and its people. He aired his views on this matter in a letter to his wife, in which we meet again the thoughts expressed in his Berlin days. The following are significant passages from this letter:

"As you know, I believe that we must always live for the future; consequently, I judge both individuals and nations by their characters, which determine their future conduct (their past can only help me to understand their character). If therefore I complain of what I consider an omission in the magnificent work of reorganising Germany, I only wish to be clear in my own mind as to the end to be aimed at during the next decades.

". . . The means of attaining this end have not been the same for the different German races, whereas the wish to attain it was uniform. (This statement will be contradicted, but I undertake to prove it to every unprejudiced person.) Accordingly, the result, too, is essentially not fair to all. I wish to show this especially in regard to Wurtemberg. If I am accused of narrow-minded particularism, I answer that this is my own sphere of action and I care for the part for the sake, and not at the cost, of the whole. By their history, their culture, character and temperament the Swabians and Franks, and therefore the Wurtembergers, are among the most German of all Germans. In no sense do they lack faith in their own capacities and knowledge; what they lack is the gift of easy self-expression and ready self-assertion. The result is, on the one hand, an empty conceit, on the other, an exaggerated opinion of men who show boldness of front and whose institutions and achievements strike the eye. By the building up of military strength Prussia has revealed to the German people their latent force, has reawakened us to self-consciousness and self-reliance, for all of which we cannot be grateful enough. With proud assurance

Germany took up the gauntlet thrown down by France.

"But by employing sharp words and the sharp sword against Germans as well and achieving an easy victory, Prussia's self-confidence has communicated itself to the defeated brother-Germans, evoking in them the above-mentioned qualities, which are now active against Prussia. We meet a double phenomenon — the Prussian thinks himself superior to the Wurtemberger, while the latter is either offended and sulky, or forgets his own special qualities and adopts an attitude of humble admiration. This state of affairs is unhappily no mere assumption of mine. The seeds were sown by the Prussian government at the beginning of the war of 1866 and from them has sprung in the hearts of the Prussian people a bitterness and contempt for their fellow-Germans which will be hard to eradicate. The existence in Wurtemberg in almost equal strength of the two tendencies I mentioned, namely, a justified resentment and servile and exaggerated admiration of all things Prussian is proved by the vacillating attitude of the government, by a press divided into two camps and by public speeches and private conversations."

These and similar comments so frequently met in the diary and letters of Count Zeppelin may be attributed to his fundamental conviction that all internal policy and indeed all public work should spring from the human heart and, in this particular case, from love for the fellow-German races. I may recall the above-quoted couplet on David Friedrich Strauss, which he thought worthy of entry in his diary:

„Vom Kampfe nun ruhender Geist, sympathisch
verehr' ich Dein Streben;
Hättest Du liebend geschont, flöge mein Herz
Dir zu."

In insisting upon respect for the feelings and healthy individuality of others and upon an understanding regard for tradition, and in practising this in his own life, he was prompted by a sensitive pride in his own South German nature. As things were, however, it was inevitable that he should often be accused of particularism by sticklers for principle and coldblooded "Realpolitiker", although it is questionable where a true and genuine "Realpolitik" lay.

We shall see that this accusation was again to play a very important part in his life.

CHAPTER VII

COMMANDING OFFICER.

By June 1871 the Wurtemberg troops were back in their capital and Count Zeppelin returned to the staff of the Quartermaster-General. His whole nature, however, cried out for active service with a field unit rather than for the lifeless routine of a staff orderly-room and, this natural bent being greatly sharpened by his war experiences, he made every effort to be transferred to regimental duty. Reverting to an old ambition, and in view of his war-time employment with a cavalry unit, he sought service with a mounted regiment. His application was approved and in January 1872 he was appointed to command the fifth squadron of the 15th Schleswig-Holstein Uhlans, stationed at Strasbourg. At the same time, he retained his rank of staff officer and aide-de-camp to the king. He was now free to indulge his natural taste for riding and exercise and, true to his conception of the duties of a leader, to train others to his own idealistic views of professional service.

He now became, heart and soul, a cavalryman. Far from confining himself to daily routine work, he tried to form his own judgment upon problems relating to his arm of the service, on its relative value, and possible development and field of application. Numerous entries in the diary show how his active brain was busy with all these matters. He held a very strong belief that a cavalryman must be thoroughly trained in the use of his fire-arm and that the carbine belongs to the rider and not to his mount, if the former is to be a valuable soldier in all situations. Every period in Count Zeppelin's varied life included incidents that marked him as a man of special stamp and his service with the 15th Uhlans at Strasbourg was no exception. In the summer of 1874 he took part in big cavalry exercises at Hagenau, concluding with a march-past. As his troops were galloping past him in a cloud of dust, he saw a man fall from his horse and then make desperate efforts to escape being run over by the squadron behind him. Count Zeppelin galloped to the spot and, regardless of interrupting the parade, brought the squadron to a halt with a sharp word of command. No mention was made of this incident during the criticism at

the end, but a senior staff officer afterwards congratulated him on "not having followed the custom in Russia," that is, in not having allowed the poor fellow to be run over.

In August 1874, Count Zeppelin, already promoted Major, was appointed to command the 2nd Wurtemberg Dragoons at Ulm and in the following year transferred there as a staff officer on the regular establishment. In 1882 he was given the command of the 19th Uhlans at Stuttgart and at the beginning of 1884 received his colonelcy. There is nothing very notable to relate of these years as commanding officer. It goes without saying that both as squadron commander and still more as colonel of the regiment he seized every opportunity of infusing into his men his own spirit. Even in those days, when the view was by no means universal, he firmly believed in treating men kindly and respecting their feelings, and he acted accordingly. He allowed no abuse, still less blows. He concerned himself solicitously with the welfare of his troops and helped wherever he was able. He was therefore loved by his men and was joyfully welcomed when he returned to the garrison at Ulm from temporary duty elsewhere. Many of his former subordinates

wrote to express their pleasure at serving under him again. In January 1883, shortly after taking over the regiment, he outlined to his officers a kind of programme in a speech which combined pride with modesty. It began:

"Does it sound strange to you when I say that the officers' class is the highest class, because it contains, more than any other, men who have deliberately resolved to give their lives for their brothers, for King and Fatherland, for everything sacred that the word Fatherland connotes? Let us always remember, gentlemen, that the individual only shares in the honourable standing of our class, to the extent that he embraces this idealistic view of his calling, and in proportion to the sacrifice he is willing to make.... It may seem to you, gentlemen, that I am presuming to place myself upon a pedestal. This I say with pride: to do good is my wish, but I confess with deep shame that I have no reason to think myself better than the least among you.

"Above all we must not forget our duties towards the men, their training and education, for that is the essence of our job. When, for instance, as happened the other day, a man who enlisted last October trembled all over when I spoke to him

RODUCTION, ON REDUCED SCALE, OF A PAGE OF COUNT ZEPPELIN'S DIARY
JUNE 23rd, 19

and, when asked if he was afraid of me, answered, "Very good, sir," that man is making a very serious charge against his instructors, not of dereliction of duty, but of failing to understand the real meaning of training."

Count Zeppelin also attached great importance to training and practising his men under war-time conditions as well as in ordinary parade-ground drill. He was fond of telling how, for example, in field work he dispensed as far as possible with all spoken words of command and replaced them by gestures and signs. His experience of three campaigns stood him, of course, in good stead. He was at all times indefatigable and full of ideas. It is about this time that he remarks in his diary with approval:

"York calls the saying of the Prince de Ligne: 'Qu'il faut faire trois fois plus que son devoir pour le faire passablement,' a truly German saying."

His military duties, seriously though he took them, nevertheless left him time to follow with interest all political, social and cultural questions which occupied the public mind during these years. The diary contains many comments on them. In particular, the "German question," the solution

of which he could not altogether accept, troubled him continually. On June 12th, 1876, he wrote:

"Every community needs for its survival a vitalising idea, in which its otherwise divergent parts may unite for common action. If for any such part the vital thought fades, decay sets in, ending in complete dissolution, unless a new ideal rekindles the dying embers to fresh flame.

"The new German Empire already lacks a focal point upon which the wishes and efforts of the people may converge (the first goal — prestige abroad — was soon attained, and its attraction diminishes as fear of foreign enemies is dispelled); where there are different creeds that have not moved with the time, the strongest bond is missing — a united faith and religious fervour — a national church, with the supreme executive power at its head. Modern science is destroying the world's belief in God; how can it warm men's hearts? A German foreign policy based on the preservation of peace is in accordance with the general wish, — the principle is good, but it is having an enervating, not a strengthening effect upon the nation. Our home policy lacks inner truth; liberal despotism, centralisation and the right of local self-deter-

mination, dependent sovereignties, these are all paradoxes; — they cannot stir enthusiasm.

"Under such a system the character of the official class suffers and it is not to be expected that the victims of mass inertia should call a halt to the work of destruction, when a liberalism in pursuit of false aims has abolished conditions based upon dependence on conservative forces and when capitalist industry promises easy profits. The education given in the elementary schools is just enough to provide fertile soil for the press, whose influence upon the unthinking mob is always bad in an age governed by material interests and inspired by no ideal.

"Thus the edifice of the German Empire has only two pillars, which may perhaps support the structure until the day of our rebirth, until the new idea, which may already be germinating, bursts through under impulsion from without or from within and puts fresh sap into our veins. These pillars are the Reich government and the German army.

"The Reich in its present form will continue to grow in strength as long as Prince Bismarck holds the reins in his firm grasp; but after him something

new must follow or it will fall to pieces, for Bismarck's one principle is what C. Frantz calls "his own personality and what it dictates at the moment"; it thus has no link of continuity with the work of a successor. George Washington's United States have lasted for nearly a century, Bismarck's Germany can scarcely survive its founder, for he is its only soul. Let us pray to God and each do what he can in order that the great chancellor's work may in time be inspired by the breath of life.

"Prussia's army is a splendid growth, which after moments of passing weakness has developed to ever greater strength. Its organisation, rules and regulations and, to some extent, too, its spirit, have permeated the military forces of the empire. In the recent war the German army revealed immense strength and, if every manifestation of vitality evokes new life, it may be assumed that there is still a good measure of vital capacity in this army. When we consider the increased effort it has made to study and apply the lessons taught by the last war, to increase still further efficiency in war and to avoid being outstripped by its neighbours, we may confidently assert that the integrity of Germany against foreign enemies is

assured for a long time to come. A devoted corps of officers maintains such discipline in the army that the existing order of things will also be safe from attack by enemies within the country, by a 'commune'.

"How long can the German army be counted upon? Are its efficiency and reliability growing or diminishing?"

These anxious speculations read to-day almost prophetically. But they also explain why the politically minded Count was distrusted in some quarters as an uncomfortable trouble-maker and why, not so very much later, a sudden term was set to his labours just when he might have expected to rise to higher and more influential positions among leaders.

Let us in this connection read a letter, in some respects topical, which he wrote in 1878 to a friend who wanted him to join the freemasons.

"My dear friend,

"I thank you for your letter and for the honour you do me in thinking me worthy of admission to the freemasons' union.

"Although I have long respected what I understand to be the work of the union, your exposition

of its aims and ideals shows me that, through my whole mentality, I have inwardly belonged to it all this time. As I can only refer to my own poor efforts and ambitions, you will not accuse me of presumption.

"If I feel myself spiritually allied to the union and believe that its aims, which I share, are best promoted by the cooperation of like-minded men, yet cannot decide to apply for admission, my reluctance is based upon three different grounds:

"I have a perhaps unpractical sense of freedom, which prevents me from accepting closer bonds than those (purely ideal) bonds which unite all educated men who try to do God's will within a larger association, of which the freemasons are only one very important part. Moreover, this larger union imposes upon me such comprehensive and unavoidable duties that I do not think I could satisfy the further special claims which a lodge — essentially, if not expressly — must make upon its members.

"Finally I must admit that rites and symbols rather alarm me, for I lack capacity to be inspired by them.

"It is not without deep regret, dear friend, that

I decline your invitation, especially as I sometimes feel terribly alone and powerless in the struggle imposed on me by my conscience. I therefore beg you most urgently not to take my confession amiss and not to withdraw your friendship from one who is anyhow a lay brother."

We who are now familiar with Count Zeppelin's mind cannot be surprised at his refusal to enter the brotherhood. A strongly conservative and cautious nature, he reckoned always with historical fact and with the powers that were and, if his modernity prompted certain reforms and improvements, he thought it right to speak openly to those powers and to urge his own ideas and proposals. Any secret plotting and intriguing he declines even in the most harmless form. He claims and uses the liberty to speak his mind frankly on all matters, "fortiter in re, suaviter in modo" and he acts on all occasions in accordance with his inmost convictions.

At this moment, moreover, he was about to take over the command of a regiment, a post in which he could work and train in his own spirit and methods. What use had he then for the abracadabra of a brotherhood, which, half-

mystically and half theatrically, claims to be aiming at what "all educated people" want and are now permitted to want? That might be all very well in times when intellectual freedom was stifled, but not now, when every man might openly stand up for his ideas!

Accordingly, Count Zeppelin felt bound to refuse, and the decision need not surprise us. What must surprise us, however, and give us food for thought is the last sentence in the letter: he sometimes feels "terribly alone and powerless in the struggle imposed on him by his conscience."

We think involuntarily at first of his later struggle as airship inventor, upon which he embarked single-handed against a whole world. But here the reference is to a time when he held a military post to his liking, a period he often described later as "the happiest time of his life," when he could work comparatively unhampered along his own lines. Surely the tragedy of the idealist cast its shadow upon him early? For, if we are to understand his cry, we must recall his anxious prophecies about the fate of the German people. We must remember how in his early days he crossed the ocean with hopes set high — and doomed to

disappointment — to see for himself how a new people was fulfilling the mission "which God laid upon humanity in the cradle," how he fell out with his king and left his service, because he could not approve his policy, just as he was concerned at the spirit and method by which German unity was being accomplished. He was a man with an exceptionally strong sense of duty and a warm human heart. As such, he demanded the utmost of himself and demanded it also of others, especially his equals in rank. At that time anyhow, — later, perhaps, life taught him to make more allowance for human weakness. He was thus bound often to encounter contradiction and incomprehension. For the world is hard and still laughs when a "fool" feels "terribly alone."

But there were, of course, in Wurtemberg, and especially in high places, plenty who knew Count Zeppelin more intimately and admired him for his moral earnestness and political vision. They were the more bound to do so, since the Count's cares and anxieties proceeded from a genuine Wurtemberg heart, and were always expressed in that tone of wise moderation and prudence which was one of the Count's most characteristic qualities. The

clever and distinguished Minister, von Mittnacht, had a particular regard for the Uhlan colonel, with whose views he had much in common. The King, too, despite former differences of opinion, continued to admire and trust the Count, as we know from his appointing him adviser to Prince William.

Accordingly, Count Zeppelin, after commanding his regiment for three years, was soon recalled and given another, perhaps more important post, that of military attaché for Wurtemberg at the embassy in Berlin. This post was especially responsible and important, because in these years it was still necessary to bring the forces of the larger southern states, Bavaria and Wurtemberg, into more complete uniformity with the Prussian army, and the military attachés had to keep their war ministry fully informed on all questions discussed and decided at Prussian headquarters. These questions included army organisation, armament, service regulations, etc. The work called for much tact and skill, especially when personal questions, or questions involving certain South German privileges and customs were concerned. For example, the post of G.O.C. 13th (Wurtemberg) Corps was always held by a Prussian officer. This often led to difficulties,

when the general appointed by the emperor was not *persona grata* to the King of Wurtemberg or *vice-versa*. It sometimes meant lengthy negotiations before the divergent views could be reconciled. A question of this kind, transferred from the particular to the general, was later to decide Count Zeppelin's own fate.

Old connections with army circles and society, dating back to the period of his first Berlin appointment, and also his completely developed social sense and knowledge of the world made his task very much easier and, as we shall see, his services won full recognition from his government. Thus, although at first he would have preferred to remain with his regiment, he soon found contentment in his new post, especially as he was able, by extending his horizon and adding to his knowledge of the world and of men, to establish close intercourse with important leading men in the capital and to form a clearer judgment on problems of the day. It was a time of great political activity: France was restless and toying with plans of revenge, encouraged by General Boulanger, while relations with Russia were extremely strained. Peace was often in danger and work in Berlin anything but dull.

Yet the Count was overjoyed when on October 18th, 1886 he received news of his appointment to command the 27th (2nd Wurtemberg) Cavalry Brigade at Ulm. He hoped he would now be able shortly to return to his regiment and to active service, where his heart lay. Many letters from comrades and people at Ulm prove that here, too, he was eagerly awaited. An unfortunate incident, however, disappointed their hopes: the Wurtemberg ambassador to Berlin, Herr von Breitenfeld, had just then died and it was decided at Stuttgart that Count Zeppelin should stay on in Berlin as chargé d'affaires, until a successor was appointed.

Much as the Count must have been gratified by this proof of public confidence and recognition of his services, he was not at all pleased at this turn of affairs, which condemned him to remain for the present in the diplomatic service. He was, however, placed in a still more painful dilemma when in the following spring (1887) von Mittnacht, with the King's consent, asked him whether he was willing to remain permanently in the diplomatic service and become Wurtemberg ambassador in Berlin. After much thought he gave his assent, on condition that his acceptance of this ambassadorial

post did not necessitate abandonment of his military career. Modest and circumspect at the same time, he thought it "possible that he would not fulfil expectations or that for other reasons it might be found necessary to give the Berlin post to another. It was also possible that a war might claim his services as divisional commander with his thirty years of military service and experience of three campaigns." Respect was paid to his wishes at Stuttgart and in October 1887 he was relieved of the command of the 27th Cavalry Brigade and, while retaining his post of aide-de-camp, his retirement with the rank of brigade commander being suspended for two years, was appointed Wurtemberg's ambassador and minister plenipotentiary at the Prussian court.

These very substantial concessions suggest that Count Zeppelin's diplomatic talents and past record were greatly appreciated and that it was strongly desired that he should represent Wurtemberg's interests in the difficult situation that arose in this "crisis year" of 1888. The same impression is conveyed by a small incident that occurred in the late summer of that year. The Count believed that he was being excluded from certain conversations

that took place between Berlin and Stuttgart concerning a visit by the young emperor to the Wurtemberg capital. Sensitive as he always was to personal affronts or slights, — a quality he shared with Bismarck — he immediately drew his own conclusions and sent in his resignation. The Prime Minister, Baron von Mittnacht, however, instead of laying the letter before the King, put it in a drawer and there left it until he had succeeded in the course of a long conversation in persuading his wrathful ambassador to withdraw his resignation.

Count Zeppelin remained at his post for the two years agreed upon, until the end of 1889. On the occasion of his farewell call upon Herbert Bismarck, the latter expressed regret at his departure and told him how sorry they were to lose a man who had won universal confidence. After paying a farewell visit to the Chancellor, Prince Bismarck, he wrote in his diary immediately after the audience:

"Prince Bismarck received me to-day (January 30th, 1890) on my farewell visit and spoke of himself more or less in these words: 'I too shall not be much longer here. I am old and tired and cannot continue to be responsible for everything. To-day I have resigned the Ministry of Trade.

I shall withdraw from Prussia altogether, in order as Reich Chancellor to be in the same position towards Prussia as towards Saxony or Wurtemberg. But I shall have to find a way of dividing up the post of Reich Chancellor still further. In foreign politics I am a specialist and in twenty-five years have created connections which I cannot hand on. I shall withdraw into that one sphere. Home affairs, where I am not required to command, but to initiate and warn, and in which, too, I am not a specialist, bother me too much.' His Excellency then asked me about my future, in which as a colleague he wished me the best of luck. When he wished me luck as I was leaving, I thanked him once more for the great consideration I had received and hoped that God would spare him to us for a long time. He answered — and there was regret in his voice —: 'No, it won't be long now. I am old and my young master is too quick for me, I cannot keep up with him.'

On January 12th 1890 Count Zeppelin left office and waited impatiently to be posted to military duty. For in spite of his success and the recognition his diplomacy had earned, he had become more

and more certain that he could only find full satisfaction and happiness as a soldier and by being given the opportunity to lead and train in his spirit and on his own lines some large unit, in a position of comparative freedom and independence. Neither his sturdily independent nature nor his particular idealistic views and leanings could find full expression in work which hampered his freedom and forced upon him a fixed "diplomatic" attitude depending upon certain political principles. He saw the realisation of his ideal in the chance of educating men to their duties as citizens and in himself doing useful work in the interests of the community. The ideal field for this work was in the armed forces, whose business it was to perform necessary state duties through the agency of Germans of all classes without regard for separate or party interests.

As ill-luck (or, in view of its far-reaching consequences, shall we say good luck?) would have it, there was, at the time the Count left office, no available Wurtemberg brigade, and he was instructed to remain in Berlin to take over a Prussian Cavalry Brigade in which a vacancy would shortly occur. He spent the time in attempting to solve

a question of military politics which was constantly being discussed by the Wurtemberg corps of officers and which had closely occupied his attention for some years. This was "the dangerous arrangement by which the whole decision on the weal and woe of Wurtemberg officers lay in the hands of one person, the commanding officer appointed by Prussia, who was the highest military authority and prime mover in matters of personnel." Count Zeppelin had often discussed this question in conversation with Herbert Bismarck (again during the last days of his ambassadorship) and he now decided, with his consent, to consign his ideas in a detailed memorandum to Count Herbert. The diary for January 15th, 1890, contains the beginning of a rough draft of this memorandum, which starts: "With Your Excellency's permission, I shall repeat in writing and shall supplement the ideas on the position in Wurtemberg which yesterday I had the honour of communicating to you orally." The compilation of this memorandum took some time and it was March before it was submitted to the Prussian Ministry of Foreign Affairs, with the approval of the Wurtemberg Ministry of War, as a statement of the personal views of Count

Zeppelin. The following may be reproduced from this memorandum:

"It is not laid down either in the Reich constitution or in the military convention that the general officer in command shall propose all changes in the service conditions of Wurtemberg officers. This arrangement, especially through the way it works in practice, means that His Majesty the King merely confirms what the G. O. C. decides about the fate of Wurtemberg officers. On this account the latter are trained to be timidly submissive to the G.O.C. and are alienated from their king."

It is then explained how these conditions would naturally lead the Wurtemberg officers' corps to desire complete amalgamation with the Prussian troops in order to "enjoy again the benefits of the supreme justice of a sovereign (the Emperor) as against the arbitrary will of a general." But such absorption was not desirable, for it would make Wurtemberg officers, and such part of the Wurtemberg population as was closely connected with the army, dependent for their existence upon the King of Prussia and, to that degree, alienate them from the King of Wurtemberg. It would result in a

system of divided loyalties, whereby the kingdom of Wurtemberg would be a heavy loser. Attempts were also being made in other directions to curtail the existing rights of Wurtemberg, but it was clear that whoever "supported such movements was sapping the foundations on which the kingdom of Wurtemberg is built — and those foundations support the edifice of the Reich." Existing grievances could not therefore be solved by a complete absorption into the Prussian army, but only by creating in Wurtemberg a personnel department on similar lines to the Prussian military cabinet.

Obviously this memorandum was not welcomed by responsible quarters in Berlin. The Emperor made various marginal comments and wrote beneath it in his own hands: "Much surprised to read these particularist ideas!"

It is more than probable that the memorandum was destined to set a speedy term to the Count's further military career. There is nothing to show that the Emperor himself took the initiative in this direction, but, manifestly, certain senior officers in Berlin were bound to object very strongly to the Count's views. Events now took their logical course.

In March 1890 the Count was appointed to the command of the 30th Cavalry Brigade at Saarburg, consisting of the 7th and 15th Uhlans. At the autumn manoeuvres he had to take command of a composite cavalry division and was most disparagingly criticised by the Cavalry Inspector, General von Kleist. He was told that he could not hope for the command of a division.

The following entries in the diary show that this opinion of Count Zeppelin's military abilities was not shared either by his immediate superiors, or by other high, even the highest, officers.

"Saarburg, November 23rd.

"My former commanding officer, General von Heuduck, could not believe that I was not to be given a division. He handed me the pencilled copy of a report on me (a page and a half on large sheets) which he had been specially requested to submit in the previous October. I remember the following passages:

'I fully endorse the opinion of the Divisional Commander (Lieut.-Gen. v. Götze). Count Z. has had no opportunity this year of leading troops of all arms, but I was present one day when he was

drilling the Cavalry Division and was satisfied that he is rapidly familiarising himself again with the command of troops. At the inspection of his two regiments he expounded correct cavalry principles. He is an open character which gains the confidence of those beneath him. He commands and looks after all ranks in accordance with imperial regulations. His conduct on and off duty is faultless. I consider him in every respect qualified for a divisional command.'

"I fall by the verdict passed upon me by Cavalry Inspector von Kleist. I do not know what that verdict is. If he is referring particularly to my uncertain and faulty command on September 5th, he is perfectly justified, for I was myself not content with my performance that day. But on the first and second days I did not do badly and met with success. If on that third day I had followed the course he recommended in his critical comments, my divided forces would doubtless have been scattered and I should have suffered the fate that he himself suffered on the two days when he was commanding the division, when I had repeatedly to ride away in order to spare his confusion. Heuduck said of the day that he was present:

'I have never seen anything like it.' He also said: 'I infinitely prefer Zeppelin to Kleist.' 'To whom are we to give our divisions, if we let men like Zeppelin go?' Kleist and I are too different in character and temperament. I suppose he mistook my pliancy for weakness and my quiet way with subordinates for lack of firmness.

"It is hard that I should be judged by this one experience with the Cavalry Division and on Kleist's verdict alone. It is God's will. May He give me strength to bear it and to do the best I can. Amen!"

"In connection with the above I would add that Count Haeseler, G.O.C. 16th Army Corps, who was present on September 5th, would not believe that I was not to receive a division. He told my adjutant, von Winterfeld, it could only be due to friction between Prussia and Wurtemberg."

I may add from my own recollection that Count Zeppelin once told me how, on the occasion of a visit of farewell paid to Field-Marshal Count von Moltke after his discharge, the latter said to him kindly: "So you're going, are you? What a pity, to lose so good an officer!"

In order to remove all doubt of the main reasons for the Count's supersession, we quote this extract from the diary:

"February, 23rd, 1891. E. heard from Steinheil (Note: At that time Wurtemberg Minister of War) that he had been told at once I should not be given a division. That was prior to Kleist's unfavourable report. In the conversation of November 23rd, 1890 already mentioned, Heuduck said: 'You must have an enemy in high places in Berlin.' I am now almost certain that Kleist's criticism was only a pretext for my being passed over, the real cause is the annoyance (due to misunderstanding) at my memorandum. I must take comfort in the thought that I am the victim of convictions openly expressed for the good of the empire."

On November 15th the Count was relieved of his command, promoted Lieutenant-General a few days later and on December 29th retired with the rank of a general in the King's suite.

This marked the end of Count Zeppelin's military career and, as he felt at first, closed to him the one sphere of activity which made life valuable to him. Life for him meant the exertion of all his forces in high office in public work for the Father-

land. What other chances were open to him? If it was true that his fall was due to a "misunderstanding" of his views, he could hardly expect employment in the diplomatic service or other higher state office. No, his unwelcome opinions or the open way in which they were expressed had evidently caused displeasure in high quarters. There is therefore something tragic about his retirement. He fell as the champion of ideas which proceeded from the depths of his nature, but which were in contradiction to prevalent views and tendencies. The only "misunderstanding" perhaps consisted in a false or exaggerated view of the Count's "particularism." We know that he was very far from being a particularist, but was one of the first men in Wurtemberg to come down on the side of Bismarck, as soon as he realised the necessity or inevitability of Bismarck's methods of achieving German unity. From that moment he was and he remained a convinced and ardent supporter of German unity under Prussia's leadership. But he could not approve a certain brutality of method, which he thought needless and even injurious. He wanted more consideration paid to the legitimate wishes and existing circumstances of the smaller

states. Now that we can look back upon the course of history up to the world war, can we not admit to-day that he was right in many of his prophecies and warnings?

CHAPTER VIII
THE CRAZY INVENTOR

COUNT Zeppelin was fifty-two when he was obliged to leave the army. Even for the average man that is too early to settle down and enjoy a dignified leisure in comparative content. His involuntary retirement came upon Count Zeppelin at an age when his extraordinary vitality and his mental and physical vigour made him feel positively young. His constitution was destined to retain its energy and activity into advanced old age. He was now entering upon that period of his life in which he was to realise his most decisive achievement — according to the general, but, as we have seen, not altogether correct, view, his really valuable achievement. How was he to employ the strong powers still left to him to his own satisfaction? His instincts impelled him ever towards conscious thought and action for the common good. Now that the army and the diplomatic service were closed to him, what scope was there still for his abilities?

It is said (and, I think, rightly) that the suggestion, or at any rate, the encouragement to seek his mission in realising his ideas of a dirigible airship, with which he had long been playing, emanated from his wife and daughter. So at any rate it came about soon after his retirement. He had, as I say, been busying himself with these ideas for many years, but casually, letting his imagination merely play with the thought of the boundless possibilities suggested by the solution of the great contemporary problem of human flight. What had been a mere flirtation now became a serious affair, to which he devoted the whole strength of his will and energies. The motive force which spurred him to effort was at first his general philanthropic and cultural ideals and only later, and then increasingly, his feelings and ambitions as a soldier and a German.

We have often been told that the idea of a dirigible balloon first occurred to Count Zeppelin when in early youth he made a balloon ascent in America, or at any rate during the Franco-German war, when he saw balloons going up from Paris. There is no evidence of this. He may, like so many others, have given passing thought on such occasions to the value of a dirigible balloon,

especially as many known attempts in this direction had already been made. But the first positive indication that the problem was occupying him personally is contained in an entry in his carefully kept diary, dated March 25th, 1874, under the heading: "Thoughts about an airship." These thoughts had been suggested by a lecture from the Postmaster-General Stephan on "international post and aviation." The entry is as follows:

"The machine must have the dimensions of a big ship. The gas-chambers so calculated as to carry the machine except for a slight overweight. Elevation will then be obtained by starting the engine, which will drive the machine, as it were, towards the upward-pointed wings. Arriving at the desired height, the wings will tend to flatten out so that the airship remains on the horizontal plane. To drop, the wings will be flattened out still further or the speed be reduced. . . .

"The gas-chambers should, whenever possible, be divided into cells, which can be filled and emptied separately. The engine must always be able to replace gas.

"Parachutes, if they can be used at all, could be attached as part of the ceiling of the passenger com-

partment and be detachable by the application to them of a person's weight."

Thus there are already three original ideas in these first plans which mark an advance on earlier attempts and come more and more to form the distinctive features of the Zeppelin airship.

1. It must have the dimensions of a "big ship;"
2. It must be driven dynamically;
3. Division into separate gas-cells.

The last paragraph quoted assumes the existence of passenger-compartments. At this time Count Zeppelin was thinking only of aviation as a means of transport, and his ideas on the subject are already very definite, as is shown by a later entry, dated April 4th, 1875:

"I should like in advance to point out a not unimportant change that aviation will effect in transport. The manufacturing cost of airships will, it is true, be high, but running expenses and maintenance very small. At first, therefore, aviation will be, partly, a luxury sport, and, partly, will only be introduced where land or water communications between two points are especially difficult and call for permanent easy, safe and rapid means of transit. (by air)."

During the next few years the diary contains only a very few vague references to the question, although an occasional remark shows that the Count's mind was still occupied with his pet scheme. Thus on November 29th, 1877 he entered the following brief note:

"Should not ascent and descent be operated by two screws on a vertical axis? The wings (for dynamic movement) could then be dispensed with."

On June 9th, 1878 he deals with a detail:

"Ballon envelopes of chinese silk, very light and, if varnished, almost entirely gasproof."

Who can say, however, whether anything serious would ever have come of this amateur preoccupation with the subject, but for an event which caused Count Zeppelin to concern himself more urgently with the matter for patriotic or, rather, military reasons? That event was the short circular flight made in the autumn of 1884 by the French Captains Renard and Krebs with their balloon "La France." This experiment, as Count Zeppelin often said in later days, made a great impression upon him, although there is nothing about it in the diary at the time. It is, however, significant that in

October 1886 he made an entry which for the first time hints at a political and military use of the airship, all past references having been exclusively to passenger ships:

"With a favourable wind dirigibles could be used for inter-communication between countries in Central Africa or for rationing armies in the field..."

Six months later, in the spring of 1887, he submitted to the King a memorandum urging the necessity of dirigible balloons. This document said inter alia: The shortcomings of the captive balloon had convinced the war ministries of the big countries that only dirigible balloons could constitute a serious factor in war. Germany was behind, whereas France, who never grudged money for the purpose of scoring military advantages over her neighbours, had already recorded successes, the airship "La France" having proved incontrovertibly the possibility of direction. In order, therefore, to make free aviation practical for military purposes, it was only necessary to build ships of larger capacity, bigger airships.

The idea that dirigible balloons would become a very important instrument in modern warfare and that Germany should therefore spare no effort to

outstrip her neighbours in this direction, now begins more and more to occupy the Count's mind and causes him to devote his energies and his newly-found leisure to building an airship that shall satisfy all military requirements. The unending series of explanations, replies, appeals and entreaties which he addressed in the next few years to influential men in Germany all contain the same cry: "Help me to build the airship for Germany's defence and safety!" Once again he had his fight, "imposed upon him by his conscience," for a lofty and important national cause and it was mainly this firm conviction which made him persist indefatigably, often almost perversely, in his endeavours, even when caught in a tangled web of difficulties, unsolved problems and what even appeared to be technical impossibilities.

It is usual to judge Count Zeppelin's firm determination and strength of character chiefly by the way in which he rose serene above all failures, some of which seemed fatal to his whole idea, and, undiscouraged, went on working and improving in the determination to compel success. And certainly this attitude of unshakable confidence is magnificent, astonishing, and will rightly live

in the annals of German history as an example of heroic effort. My own feeling, however, is that what he undertook in the first decade of his campaign, between 1890 and 1900, and at last carried through by untiring and indomitable effort, often in the face of painful personal humiliations, was relatively the most astonishing and wonderful achievement of the whole struggle. For such was the position that to be engaged with the problem of a dirigible balloon was like trying to square the circle: it was looked upon as a sign of mental instability. Count Zeppelin himself wrote in June 1891 to Count Schlieffen, Chief of the General Staff:

"My dear Count,

"You will perhaps remember a conversation we had during a ride in the Tiergarten on the subject of dirigible airships. I did not at the time attempt to put my ideas into practice, as I was too busy to work them out and, besides, it would have worried me to be looked upon, even temporarily, as candidate for a lunatic asylum.

"Now when I have nothing better to do and when public opinion can only hurt me personally,

and not any profession in which I am engaged, I have been reverting to those ideas and have given them shape — so far, on paper only."

The relatively most successful performance to which reference was possible and upon which further work could be based, was the short circular flight of the "La France" in 1884. On close study, however, this attempt proved the practical impossibility of a dirigible balloon, for the ridiculous speed of 5.5 metres per second, attained with the engine power at that time available, was, as we now know very well, quite inadequate for any practical use of the vessel, and the very slight buoyancy attained in spite of the very small horsepower, was only sufficient to carry a small supply of fuel and to make very short flights. It was a pretty piece of balloon technique, but of no practical value. And it was in face of these circumstances that the foolhardy Cavalry General set out to obtain help and funds to build a gigantic and very expensive ship which, from the constructive point of view alone, raised a whole host of technical problems beyond the power of contemporary technique to solve. It is almost a miracle that the Count none the less succeeded in getting his con-

structive ideas first seriously considered and at last, after ten years of hard fighting, put into execution. To-day, when we know that even by 1900 the technical requirements for the construction of a workable airship did not exist, we ask in genuine surprise how this was possible. We are also tempted to ask whence Count Zeppelin derived the courage and determination to stand unswervingly by the soundness of his ideas. The answer is that, with the optimism of all inventors, he firmly believed in the advancement of technique and in its ability to solve all the problems set by his ship. Also he was convinced that his own airship scheme was the best. "If airships are possible at all," he wrote in his diary at this time, "then mine is possible!"

The fact that Count Zeppelin made a few technical mistakes in his work, is beside the point. He was not a trained engineer and had gradually to learn his subject. He himself always speaks very humbly of his preliminary training and of his natural aptitude for the task he undertook. Thus at the end of 1891 he wrote as follows to the chairman of the Daimler works, whose interest and help he had enlisted:

"You appear to have less confidence than when I was first permitted to broach my plans to you. That is natural enough and does not surprise me. Once engaged upon the matter, you are influenced by the unfavourable opinion generally passed upon the plan of building airships, by the reports of how hundreds of its devotees, among them highly-skilled technicians, have failed and how millions of money have been swallowed up in it. How then can Count Zeppelin have solved the problem?

"I have solved it, not because I knew any more than my rivals, but by the simple, sober thinking of a serious man, whom nature has endowed with common-sense; and by coordinating already established data on the subject, while making use of the latest discoveries and inventions.

"I had hoped that you and Dr. Steiner would at least help me on my way towards completing a work which would secure for our German Fatherland an advantage that should not be underestimated.

"Not for my sake, but for Germany's I implore you to reconsider the matter, before you deliver to my scheme what may be its death-blow."

Thus he brought to the problem sober, simple thinking and common-sense, and its solution, too, had the simplicity and practical quality of most solutions arrived at by genius. Details apart, its main characteristics are a metal structure, giving solid form to the whole ship, and, within this structure with its covering of fabric, a number of gas-cells, which expand and contract, "breathe", as it were, with the ascent and descent of the airship or under changes of temperature. The whole ship can be made as large as is desired by extending the frame and adding fresh gas-cells; can be made long enough to meet all demands, so that it contains, as the Count once put it, "a strategic idea" for its military use. Incidentally, the rigid framework provides a suitable basis for the attachment of all the necessary parts, such as steering-apparatus, engines, propellers, etc.

The essential is the rigid framework with the cells inside, an idea as brilliantly simple as it was startling. A rigid frame! Opposition was at once directed against this feature, both by aeronauts and by engineers. The former, who criticised the lack of landing capacity of the fragile ship, could safely be ignored for the time being,

for the point they raised could wait till later. The ship had to rise and keep in the air before it landed, and the engineers whom the Count consulted were of opinion that a rigid ship, if built strongly enough, would be too heavy to rise, but, if built lightly enough to rise, would not be sufficiently strong.

Now began a period of close study and experimentation by the Count in order to solve a whole number of questions. All kinds of materials for the frame-work, for the outer cover and for the gas-cells were tested in respect of weight and stability. The weight of the engines and their consumption of fuel and water were examined and, as far as possible, reduced. The propellers were a trouble, it being uncertain how far they would be effective. To settle this question, experiment was made with a boat. Hydrogen gas was not pure enough and an attempt had to be made to obtain from the existing works a better and lighter gas. An enormous crop of such questions were tackled and the assistance of numerous firms and private persons was invoked to solve them. The technical estimates and tests were carried out by an engineer named Gross, recommended to Count Zeppelin by the Daimler works.

The results seemed satisfactory. In June 1891 the Count wrote confidently to the King of Wurtemberg's principal private secretary, as follows:

"Your Excellency,

"In view of the great interest His Majesty has taken for some years in the progress of aviation, I have the honour to ask you to inform His Majesty that I am intending shortly to build airships, which I am satisfied will be dirigible even in strong wind. Passengers and goods will be carried in special vehicles attached to the machine. My airships are designed to facilitate rapid transport independent of terrestrial obstacles, and will therefore be of the first importance for military and, especially, naval purposes. Before taking any other steps than to apply for a patent, I think it my duty to draw the attention of the Reich government to my invention. I shall be obliged if you will obtain His Majesty's consent thereto.

"I do not deny that my invention, especially in view of the almost daily emergence of similar schemes, will be sceptically received and that I shall have to prove its efficiency before I can count upon any substantial support or financial aid for my enterprise."

A few days later, in June 1891, he wrote to Count Schlieffen:

".... My machines, carrying fuel for twelve hours and having a device which allows of uniform gas expansion under different air-pressures, without loss of gas, will be able to make quick long flights. They will not, however, as a rule, fly alone, but have carriages attached to them for passengers and freight. Their load is reckoned for the present at 500 kgs. each. Suitable arrangements ensure that the attached carriages keep in a line. The increase of air-resistance is slight, so that it should be possible to build a fairly long train (20 metres per second is nearly 10 geographical miles per hour).

At the same time the Count asks the Chief of the General Staff to send an expert officer to Stuttgart to test his designs and estimates. The request is at once granted and orders are issued to Captain von Tschudi, commanding the Prussian airship service, to get into touch with Count Zeppelin.

Then an extraordinary thing happened. Only a few days after writing to the Chief of Staff, he decides "to give the thing up." Why was this?

Along with calculations of stability and of the ability of a rigid metal-framed dirigible balloon

to rise and keep in the air, Count Zeppelin was mainly concerned with the ship's speed. The "La France," with her 5.5 m/sec. (about 22 km. per hour) was obviously much too slow to be used even against a gentle breeze. It had been the Count's hope, with the engines at his probable disposal — incidentally, they still had to be built by the Daimler works — to attain at least double and possibly treble that speed. In the letter to Count Schlieffen he even speaks of 20 metres per second. It is, however, gradually borne in upon him that his estimate is too optimistic. In order to reach three times the speed of "La France," he needs, purely theoretically, as he reckons, at least 45 h. p. But he will probably command not more than 20 h. p. in his two Daimler engines, for his heavy ship will not carry a greater power than that. Even these estimates are very uncertain, for they are based, in the first place, on certain probably over-favourable assumptions relating to "La France" and, in the second place, on the belief that air-resistance mainly depends upon the cross-section area of the balloon and that the ship's length is a secondary factor. It was thus that the Count hit upon the idea of building a sort of "air train," that

is, of coupling a carriage to the engine, as we saw in the letter to Count Schlieffen. At that time aerodynamic experiments and data hardly existed. Now we know that the skin resistance of the whole machine amounts to much more than its head resistance. This knowledge began to dawn upon the Count and at first it completely baffled him. He had been in close touch, among others, with Herr Riedinger, the well-known balloon manufacturer of Augsburg, and with Herren von Sigsfeld and von Parseval, both expert balloonists. These gentlemen had no belief in a dirigible balloon (not even Herr von Parseval, later well-known as a builder of airships!); they did their best to dissuade Count Zeppelin and commended the aeroplane, which they were working upon, as the only solution of the flying problem. Hitherto the Count had always adhered to his own plan in his dealings with these gentlemen, but on July 14th, 1891, he wrote suddenly in his diary:

"The joint rejection of the gas-ship by my friends, and the labour and cost of preparatory work caused me last night, as we drove to Göppingen together, to abandon my scheme. Then this morning I reverted to the idea of combining gas-carriage with surface-carriage. But I should need

45 h.p.! This and the expert enthusiasm of Riedinger for the aeroplane, again decides me to give it all up. I returned home from our nice dinner depressed and with the one idea of cancelling arrangements with Schlieffen, von Tschudi and the Patents Office."

The story seems at an end — the Count has openly said so to his friends. How hard he found it to give up what was to him his life and work — and life, to him, meant work — we cannot gather from the sober words in which he records the fact. But we can guess it from what followed. For in the very act of recording his decision in the diary an idea suddenly occurs to him. Immediately hope returns and, with it, determination to work on. After an obvious pause for thought, he continues:

"But wait! When I asked Riedinger during our drive how they proposed the aeroplane should mount, he said that the machine with its crew would be shot into the air by pneumatic propulsion. That seems to exclude its general use, if only because flights could only be made from the place where the gun was fixed.

"But now I have further learnt that Sigsfeld is producing petrol-driven engines so light that

20 h.p. engines weigh only 110 kg! Petrol consumption about ¾ kg. per hour and h.p. So I can, for example, use four such engines, i. e. 80 h.p., with a weight of only 440 kg. With 80 h.p., even if that meant only 60 h.p. at the wings, I shall attain a speed of 17 metres per second, even 17.5."

Then follows a detailed calculation of the total weight of the proposed ship.

Result: the Count does not cancel arrangements with Captain von Tschudi, but, on July 31st, less than three weeks after his decision to give up, writes the following letter to Herr Riedinger:

"Dear Sir,

"After you and your colleagues had so kindly told me how matters stood with your attempts to solve the problem of a dirigible aeroplane and of the experiments you have made, I told you in answer to your enquiries that I should drop the matter. I must now confess to you that I have after all returned to the pursuit of my original plans. This is due to what you told me just as we were parting, that you intend to start the machine upon which you are now engaged, by propelling it from a pneumatic gun. Without expressing any opinion

as to whether this could be done without great danger to the crew of the machine, the process seems to be to have this defect — that a flight is only possible where such a gun is in place. Although I agree with you that the future of air navigation probably lies with the aeroplane, I believe that the dirigible airship, carried wholly or largely by means of gas, is bound to be the precursor of an aeroplane that will only rise on inclined wings, in order that we may learn from the airship how to handle the aeroplane.

"These considerations have persuaded me to enter into the negotiations with Captain von Tschudi, head of the airship service in Berlin, already initiated before my visit to you. Captain von Tschudi has encouraged me in the execution of my plan of a balloon ship and offered his services in helping to combine my efforts in this direction with your own.

"However things turn out, I shall never cease to be grateful for your kindness to me and shall sincerely rejoice over any success that may attend you in a matter so important to Germany.

"Nor shall I fail to inform you before I enter into any close relations with other technical or

financial quarters, should you now tell me — which I shall quite understand — that at this advanced stage in your work it is impossible for you even temporarily to depart from the course you have adopted.

"With best wishes to yourself and your collaborators, yours etc."

We may wonder at the optimism with which the Count fixes his new hopes and his decision to resume work upon an obviously vague statement about a new light engine. Tschudi indeed told him at their first meeting that the weights mentioned by Herr von Sigsfeld for the engine alleged to be in course of construction were given at far too low a figure, and the Count accordingly reverted to Daimler engines. Evidently, it was not so much the new lighter engines that encouraged him as a certain newspaper message. He had cut out this report and stuck it in his diary in the midst of a draft letter he wrote to Count Schlieffen on the conversation with Tschudi. It said:

"Tests were carried out to-day in Chalais-Meudon Park with a dirigible balloon. General Freycinet was present. The chief feature was a new engine developing high power with very little weight."

Immediately the Count wrote to his engineer, Herr Gross: "You may have seen from the newspapers that the French military air service has been experimenting before the Minister of War at Chalais-Meudon with a dirigible airship driven by a small but very powerful engine. You will realise how we Germans must hurry up, if we are not to be left behind.

"It is urgently necessary that Herr Daimler should have more faith in the possibilities of a dirigible airship, as soon as there is available a sufficiently light, yet reliable engine."

Thus it is patriotic motives which urge the Count to further endeavour. The thing *must* succeed! The French must not get ahead! If the engine does not yet exist, we must make it. If our builders are not yet willing, I shall have to spur them on. "Duttenhofer," he wrote at this time, "must use his influence with Daimler, to get a move on."

He has accepted the idea that Riedinger's men might succeed with their "flying machine," but he too intends to go ahead with his gas-ship. For we must stake all on being first in the field with an aeroplane fit for military use! On August 7th

he wrote to Tschudi, half-resigned, half-sceptically, but quite clear about his own position:

"Negotiations with Daimler and his director, Schröder; calculations as to the strength and weight of a rigid airship independent of gas expansion; but mainly Riedinger's statement that he is certain to solve the problem through aviation and will therefore make no further experiments with a gas-borne machine have decided me to continue.

"Even supposing that Riedinger's flying machine soon materialises, I believe that an airship for the carriage of less daring or less skilled people will for at least a long time to come have missions enough to fulfil, for which the aeroplane would not be suited.

"Renard, too, who has so far been the most successful of any, is apparently sticking to the balloon, for which he has built an engine as light as possible, yet powerful. I am curious to learn more of the machine which he showed on July 27th to Minister Freycinet at Chalais-Meudon."

Work is then busily resumed on details; contact is made with numerous specialists; in particular, closer relations are established with Duttenhofer,



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his strongest ally, and with the Daimler group. But it is terribly difficult to keep a grip on others, when he himself has become momentarily hesitant. Duttenhofer threatens defection. He wrote to Zeppelin's engineer, Gross, that the Count was working on false and over-optimistic hypotheses and that he should not spend any large sums. Gross apparently did not answer this sufficiently firmly, and the Count decides to dismiss him. "In view of the natural prejudice against me as a layman," he wrote to Duttenhofer, "it is doubly necessary that my engineers should support me, instead of being, as Herr Gross often is, an obstacle in my path. Moreover, I have from the beginning been looking out for a younger man, capable and prepared to work hand-in-hand with me throughout."

Certainly there was nothing to be done in such case with over-cautious "safety-first" men, who in matters of technique cannot look beyond their noses. The Count needed helpers optimistic like himself, who reckoned with technical progress and sought by their own claims to compel it. Thus, after some attempt to obtain another engineer who had been recommended to the Count, a

contract was signed in March 1892 with a young engineer, named Kober, of the Riedinger firm at Augsburg, who was to start work on May 1st. "I am looking forward to May 1st, when we can begin, and I hope to God that by our joint efforts we may succeed in doing something useful for our German Fatherland."

Meanwhile work went quietly and carefully forward. Arrangements were made with the Mannesmann-Röhre works, the Neuhausen Aluminium works and with a British firm of exhauster manufacturers, so as to obtain the best materials and fly-wheels. Successful efforts were made to interest distinguished engineers, like the well-known Professor Bach, and once again the Count explains his ideas in a detailed and widely distributed memorandum, from which we may quote this extract:

MEMORANDUM ON THE DIRIGIBLE AIRSHIP

"The newspapers have recently been more than usually full of articles emphatically denying the possibility of solving the problem of navigating through the air a body borne by gas. On the other hand, it is universally expected that imitation

of a bird's flight will lead to the desired goal, the dirigible airship.

The assurance with which the writers of these articles pronounce their verdicts, based upon the opinion of world-famous engineers, is calculated to shake such confidence as has already been placed in my own method of procedure. In the following memorandum I therefore propose to show that all attacks tend to confirm the accuracy of my calculations and not to discredit them.

I would observe at the outset, as regards the expectation that a dirigible flying-machine will be produced in simple imitation of a bird's flight, that this hope is in so far justified that wings suitably placed and moved through the air can carry any weight properly proportioned to their span and the speed imparted to them. But they will not fulfil that function until they have attained the necessary speed. The problem of imparting this speed as initial speed to the expanded machine without danger is still unsolved. If a solution should shortly be found, gas-borne aircraft, which do not fall when the engine stops, will still be of inestimable value, especially for flight over mountains and seas.

The resistance encountered by moving surfaces, as various experiments in England have proved beyond doubt, does not increase in any proportion to their size, whereas the area of the circle increases in proportion to the square of its radius. If therefore the airship is given a cylindrical form, like my own and others, its carrying capacity increases far more quickly than the resistance of the air to its forward movement.

The possibility of making cylindrical gas envelopes large enough to carry heavy engines and yet firm and rigid enough to stand, without bursting, the resistance of the air to forward pressure by the powerful engine, is quite rightly questioned.

For that reason my own airship consists of a strong and completely enclosed chamber with numerous partitions. In the compartments formed thereby folded envelopes, shaped to the compartments, are first inserted and then filled with gas. These gas-containers, which are able to raise the whole weight of the machine, thus escape all pressure due to the movement through the air.

I annex a few particulars of my plan, which I shall be glad to supplement, if desired.

In order to have some basis for calculating the

resistance which my airship will encounter in the air, I am giving it the same cross-section area as the French army airship "La France," about whose trials all the necessary figures are known.

Flying at a speed of 5.5 meters per second, "La France" encountered a resistance of 22.8 kg. The power used to attain this speed, measured at the shaft of the engine, was 175 kg.$=2^1/_3$ h.p.

I am using an engine of 30 h.p.$=2250$ kg. According to experiments carried out, the fly-wheels apply a pressure of at least 70% of the engine power measured at the shaft, that is

$$\frac{2250 \cdot 70}{100} = 1575 \text{ kg.}"$$

This memorandum breathes the Count's entire confidence in ultimate success and his firm faith in his machine, a faith enormously strengthened by his wish to establish a lead in the growing rivalry with French aviation. Whether his statements could stand the cold light of criticism may be doubted. The speed calculations, for instance, might well have been queried, for there were no reliable data as regards the efficacy or thrust of the air-screws on the "La France," nor could Count

Zeppelin at that time know anything of the screws with which he would have to reckon. Also we now know that a speed of 10 metres per second is not nearly enough "to ensure almost continuous flight." But the count saw in his machine, although through rose-tinted glasses, a substantial advance in performance and, still more, in construction. He thus pressed eagerly onwards, feeling more or less sure that his own principle of building held the secret of future progress. As time went on, this feeling found more and more confident expression.

In May 1892 young Kober entered Count Zeppelin's service and with him began the careful testing and concrete shaping of the Count's conception. This consisted essentially of the aluminium structure composed of tension rings and longitudinal members which, though since perfected and improved in a thousand ways, is still the recognized form of the Zeppelin as we know it to-day. Its construction followed current principles of engineering so conscientiously — within the strict limits of aerodynamic knowledge of that day — that by 1893 Count Zeppelin felt justified in submitting the result to a body of military experts. Accordingly, he set about creating the necessary

committee. His exertions to this end and his battles with the committee, when it was at last formed, are among the most dramatic chapters in the Count's long and eventful struggle, for he had now to deal mainly with high officials of the Ministry of War. Officials, as we know, are not there to be bothered with the ideas of a mere layman, when these ideas are regarded by their own experts as fantastic. And did not everyone know that only the queerest of fish could occupy themselves with an airship, especially a monstrous thing like this Zeppelin? The fact that the layman in question was a general did not improve matters in their eyes; on the contrary, it increased their distrust, for had not this particular general been noted at all times for his eccentricity and been retired on that account three years before?

Then, too, the Count found he had now to deal with members of a very exclusive science. It was asking of engineering experts a good deal to collaborate with an inventor whose peculiar vocabulary and way of putting things marked him out at once as a self-taught amateur.

The atmosphere was therefore unfavourable from the beginning, and, admittedly, the Count

would never have succeeded in bringing the committee into being, had he not happened to be Count Zeppelin, whose social position, character and military record gave his endeavours a certain *cachet*.

The Count first approached the Prussian Ministry of War direct. Making no progress along this road, he sought the help of certain senior officers, particularly Count von Schlieffen, Chief of the General Staff. He went higher still, for he persuaded his king to draw the Emperor's attention to his invention during the latter's visit to Stuttgart in September 1893. On October 2nd the Count again wrote to Count von Schlieffen:

"As I had the honour to foreshadow in my letter of the 14th ult., His Majesty the King of Wurtemberg graciously drew His Imperial Majesty's notice to my project. As the result, His Majesty the Emperor, when leaving Stuttgart on September 16th, graciously told me that I should hear from him and, to start the ball rolling, General von Hahnke instructed me to submit an urgent petition to the Emperor. This I have done and have forwarded my petition with a letter to His Excellency von Hahnke."

After waiting impatiently for an answer, he wrote at the end of October to General von der Goltz, Chief of the Corps of Engineers:

"... If I do not succeed now, there is serious reason to fear that Germany will lose the lead in this invention. There will always be men enough with more technical knowledge than mine; but, if I fail, it would not be so easy to find anyone willing to risk his money on the experiments necessary to satisfy even himself of the practicability of his scheme."

He was no doubt correct in this view, and it was with relief that on November 13th he was at last able to write to the Ministry of War:

"I am grateful to the Royal Ministry of War for its letter of the 4th inst., expressing willingness to have my design of a dirigible airship tested by a committee, with the assistance of the airship service and experts in engineering and aviation."

The last sentence in the letter throws light on his situation and the growing difficulties with which he contended:

"May I venture to assume that, should the future committee find no errors in my calculations, the Royal Ministry of War will be willing and able

to provide at least the funds necessary to complete my designs and to secure direct contact between my own preliminary work and a first beginning with the building of airships? I could not be answerable to my family for adding this expense to what I have already incurred."

But the mills of God grind slowly! For the moment the Count heard nothing further of the convening of this committee and on December 29th was impelled to write to General von Lindequist, asking him to use his influence in pushing matters farther:

"If the Ministry of War cannot grant the small sum, payable over a long time, I too must decline to make any promise in that direction. For in time I shall be bled white and nothing will have come of it all. If I have to cope single-handed with all the contending factors, the whole business will collapse, as I explained to the Emperor when he told me to submit my request. In this way the Emperor's help will be of no use. He must order the committee to start work — and quickly, on the understanding, of course, that I impose no conditions which the Ministry of War cannot fulfil."

Meanwhile, he carefully supervised and improved

his plans, and submitted material in support of the cost of his work and of his claim to be heard by a committee of experts. On January 30th he wrote modestly, yet confidently, to the Minister of War, General Bronsart von Schellendorf:

"More than twenty years ago I hit by chance upon the ideas which underlie my present design for dirigible airships. Now that I have no professional duties, I am trying to realise those ideas for Germany's good. Close study and a knowledge of the mistakes or defects in previous attempts to solve the problem of dirigible aircraft have gone to the completion of my model, which now, after years of work and with all confidence in its utility, I wish to submit for inspection to a committee of first-class experts in mechanics and aviation.

"In order to have a sufficient supply of metal parts to meet anticipated requirements in the matter of strength, I have made many hundreds of enquiries at the Royal Materials Testing Office at Stuttgart.

"To confirm certain questions of balloon manipulation and direction, I have employed the professional services of the well-known airman Spelterini and his balloon 'Urania.'

"Calculations and drawings as well as various tests of machinery and material have been made by skilled and experienced engineers in my service.

"The machine, which we have the honour to submit to you to-day, is my own invention only so far as concerns its fundamentals. The whole merit for its completion, which can challenge comparison with such modern engineering problems as the Channel tunnel, the Eiffel Tower, etc., belongs to my engineer, Herr Kober."

At last, on February 16th, 1894 he received news of progress in his affair, but it was news that infuriated him. He wrote in his diary:

"General Lindequist heard from General Bronsart on about February 8th that it has been arranged that, to begin with, two air captains, one from Berlin and one from Munich, shall be sent here to see whether my design is worth considering. If it is, then I am to send it for further tests to Berlin. Such distrust is really mortifying.

"Two subaltern airmen, incapable of judging the constructive side of my work and who *cannot* know more about dirigibility than I do, are to decide whether they like my design. The matter therefore lies in their hands — the hands of men

who are really my rivals, for they would be glad to solve the problem of dirigibility themselves. I gathered so much from Tschudi, when he was here three years ago. I wonder if someone in Berlin is behind these delays?"

The two officers were never sent. On March 10th the committee actually met, with Professor Helmholtz in the chair and consisting, for the rest, of three professors and three officers of the air service. The committee agreed upon a formula drafted by the chairman that "the plans laid before it were well worthy of notice and did not appear impracticable, and that the committee therefore recommended the Royal Ministry of War to take steps to secure the invention for the Reich." Apart from criticism directed at the landing and anchorage of the airship — mainly by the air officers — it was questioned, especially by Professor Müller-Breslau, whether the framework was strong enough to meet lateral resistance. But Professor Müller himself said that the necessary reinforcement would not be a very serious matter and should not prevent the ship from rising and keeping in the air. Accordingly, further negotiations were started and Count Zeppelin agreed to revise his model in the light

of Müller-Breslau's criticism. In June the committee, "without wishing in any way to express a final judgment," declared Count Zeppelin's invention to be so important: "that it feels bound to recommend to the Royal Ministry of War that it should guarantee the possibility of further work by granting the minimum funds necessary to provide continuity between the preparatory work and experiments already carried out and a first beginning with the construction of an airship.

"It does not seem proper to expect Count Zeppelin to furnish these funds, for he declares that he has in the past made sacrifices for the sake of this preliminary work and experimentation up to the limit of his capacity."

Asked by the chairman of the committee whether he would at his own expense alter his model in accordance with Müller-Breslau's criticism, in order that the committee might form a final judgment, Count Zeppelin, in view of the great sacrifices he had already incurred, was obliged to decline and he was then advised to ask the Ministry to enquire of the committee as to the means of finding the money. The Count accordingly wrote to the Ministry of War as follows:

"I respectfully beg the Royal Ministry of War to ask the committee appointed to test my designs whether, without in any way prejudging their final opinion, they agree that it would be most desirable that I should be enabled to make the alterations already referred to and, pending their final decision, to continue preparations for the eventual construction of an airship — but that, if the committee so agree, I should be granted funds for this purpose up to a maximum of 20,000 marks."

Had this question been put to the committee, it would certainly, as Professor Helmholtz told the Count, have recommended that the Reich should undertake the cost of the alterations. But the letter never reached the War Minister himself; it was pigeonholed in one of the departments and dismissed with the comment: "No funds available for such purposes; they would have to be asked for in the budget." The real opposition, then, came, not from the technical experts, but from the army, which had testified its love for Count Zeppelin four years before!

In these circumstances the full committee, at a meeting held on July 14th, to which Count Zeppelin was not invited, unanimously rejected the model,

mainly on the grounds of Professor Müller-Breslau's report recommending the need of "further very substantial reinforcement, far exceeding the present buoyancy capacity."

Count Zeppelin's position now looked almost hopeless, for, if the Ministry of War, with the backing of expert opinion, refused to concern itself further with the problem of rigid aircraft, where was he to obtain funds for building or even for further study and experiment? No industrialist would provide a penny! But he was not to be beaten. First he decided to make the necessary alterations at his own expense, although, as he wrote to General von der Goltz, "my purse is slowly bleeding to death." Next he attacked Professor Müller-Breslau's opinion. He dared to declare openly that, although the professor and other authorities might be masters in their own branch, that did not make them experts in the new field of aviation. Their assumptions about wind-pressure, for instance, were quite wrong; that pressure did not increase in proportion to surface, but in a much smaller ratio. Here the Count was undoubtedly accurate in his forecast. By the end of August his confidence in himself was so far

restored that he applied to the War Minister with a request that the committee should be re-convoked, an almost unheard-of suggestion judged by conventional standards. He wrote:

"To the Prussian Ministry of War.

"Annexed to its letter of August 1st of this year, the Royal Ministry of War communicated to me Professor Müller-Breslau's report on the static conditions governing the dirigible airships I have designed. The faults he finds are admitted, if, in judging of the airship's stability, only the metal structure itself is considered, and not the added strength derived from gas expansion.

"In view of the condition, laid down in my petition to the Emperor and accepted by His Majesty, that I might personally defend my designs before the committee and that the faults pointed out by the latter must be such as cannot be remedied, I beg the Ministry of War to be so good as to give me the opportunity of proving to the committee that the errors found in the original designs have since been rectified."

A point of technical interest and importance in this letter is the remark that gas expansion must be

taken into account, when calculating, as Müller-Breslau professed to do, the ship's strength. Count Zeppelin is here referring to a factor in construction which is to-day very seriously weighed, but which for several reasons cannot always be determined with mathematical exactitude in the case of a moving ship and which at that time was still further from the mind of an exact expert in statics. Whether the Minister of War attached much weight to this plea by the Count, may be doubted. He was necessarily much more impressed by the Count's complaint that he had not been invited to attend the committee's decisive meeting. The Count felt this wrong done him so keenly that he wrote in his diary: "What is the legal position between myself and the Prussian Ministry of War in the question of the testing of my designs?" He was evidently thinking of taking legal proceedings. However, there was no cause to go to such lengths, for vigorous and persistent knocking at doors resulted in December 1894 in a re-summoning of the committee. The Count set high hopes on this meeting, for he had meanwhile strengthened his machine and had heard from General von der Goltz that Professor Helmholtz (by now, unfortunately,

dead) that "Zeppelin's model was so important that at all costs something must be done about it."

But the Count's hopes were disappointed. The design was rejected a second time. Apart from technical and aeronautic objections, an argument adduced by the War Ministry is noteworthy as showing the unbridgeable gulf that separated Count Zeppelin's views from those of the military authorities:

"The ratio of cost to utility of such machines is so unfavourable that the military authorities could not be asked to furnish considerable sums for the execution of these designs. Only if the machines were already in service and had proved their value in civil transport could any attempt be made to use them for military purposes." The two parties could not come together. A bureaucratic government is always parsimonious and averse to outside plans and schemes; a pioneer and inventor must have faith in progress, he must take risks and not count the pennies. Count Zeppelin saw the French army taking risks and providing money for the development of aviation and asked himself why the German army did not do likewise.

There seemed now to be no way out of his

difficulties. It looked as if he were done for, but the Count still would not accept defeat. He continued to defend his cause against the aviators and against the statical experts. With Müller-Breslau he had a heated quarrel. The Count had cause to complain of the Professor's contemptuous attitude and requested the protection of the officers on the committee against "a letter written in a spirit of scorn and disrespect bordering upon the improper." He also tried to save the situation by further letters to the King of Wurtemberg and even one to the Emperor. But in vain! The only result was a ridiculous grant-in-aid, at the Emperor's orders, of 6000 marks. He hesitated before accepting this miserable dole, but he had urgent need of money and squared his conscience, in a letter to the Minister of War, as follows:

"Although there is no present prospect of building an airship after my design, I think I am justified in accepting the sum offered me, if only because the lighter gas obtained from the Stassfurt works through my endeavours will be of great advantage to the air service. Equally beneficial to military aviation will be the process I have recommended to the Franz Clouth Rhenish rubber works for the

manufacture of gas-proof material with a smaller addition of weight than hitherto."

To the King, however, he wrote at the same time — mid-July 1895 — an astonishing letter:

"Although the hopes I had placed in His Majesty the Emperor have not been fulfilled, I am unable to abandon my attempt to secure for Germany the advantage of possessing the first efficient dirigible airship. I have therefore applied to Herr Duttenhofer of Rottweil. The latter, so far as he can judge from a cursory examination, endorses my protest against the Professor's verdict and has invited Gross, the chief director of Krupps of Essen, to come and examine carefully to see who is right on the points in dispute. In the industrial world Gross' reputation is such that his judgment far outweighs that of the most distinguished theorists."

What opinion was to be expected from this director Gross, with the same family name as the Count's former and less successful engineer and the not too kindly disposed lieutenant in the air service? If names meant anything, the omens were unfavourable! The criticism he had to meet was

that the ship was neither strong enough nor quick enough. What would he say?

Lo and behold! Director Gross, a balloonist of repute, employed by Krupp, reckoned that in his opinion the ship would have a speed of 12.4 metres per second, if it were given a better nose. The committee's figure had been a maximum of 6 metres per second.

Count Zeppelin naturally hailed this opinion of the well-known balloonist with jubilation, for he himself had always reckoned with a probable speed of 12.7 m/sec. In the interests of truth it should be mentioned that Director Gross was out in his reckoning, as later experiments proved, but the opinion was of great psychological value to the Count at a critical moment and a wonderful piece of luck for him and for the cause of rigid aircraft. He wrote at once to the Ministry of War to ask what they proposed in view of this new situation. Naturally enough, he did not receive the hoped-for reply. He informed his friend the King in these terms:

"At the beginning of July last I informed Your Majesty that Director Gross of Essen, Germany's leading expert on the resistance of air to moving

bodies, was to test my calculations of the flying speed of my airships.

"Herr Gross has expressly rejected the estimates of Professors Müller-Breslau and Busley — they are really not experts in this field — and has confirmed my own speed calculation of 12.5 metres per second. By experiments made with shells he has furnished further unimpeachable evidence of the accuracy of this estimate. The committee had no other objection to my designs and its only reason for not recommending the construction of an airship lay in its own calculation of the speed as scarcely 5—6 metres per second.

"Now that science and experience have recognized the efficiency of my designs in all respects, the expense should no longer stand in the way of building."

It must regretfully be admitted that at this stage of his campaign Count Zeppelin's pertinacity amounted almost to perversity, due, no doubt, to irritation at the obvious hostility of the military authorities and the superior attitude of some of the professors. Hitherto, the strength of his case had lain in his defence of the principle, his statement that "my system is the best, the only

conceivable one for military proposes and, if airships are possible at all, then mine are." Also he had counted upon technical progress, once a start was made, to meet, as time went on, all requirements in matters of building material and engine power. Now he acted, or seemed to, as if, with Herr Gross' calculations — who after all was not an expert in airships — all the preliminary conditions were fulfilled. We can understand his attitude, when we remember that he was by now desperate, his funds exhausted, while he rightly believed that, if he himself gave in, the whole matter would drop. What Count Zeppelin really needed was not the optimistic estimates of a single non-expert, but the assistance of some really authoritative body, which would share his own view of the importance of the problem and with his own optimism compel technical science to examine a problem which, though difficult, was not insoluble. This body now appeared, in the form of the "Union of German Engineers."

First, however, the Count tried to progress on his own account. Deserted by almost everyone, he saw no other choice. In December 1895 he published a further memorandum, based largely

upon Director Gross' opinion, and, by the issue of bonds of 20 marks and more, tried to raise 800,000 marks capital. The attempt, as may be supposed, was not successful. Some hundred thousand marks were subscribed, mostly by a few old friends, among them members of the Wurtemberg royal family. The failure may have been due in great measure to the fact that the Ministry of War actively advised military circles not to subscribe. This was the period in which the Count was publicly derided as a lunatic and names were shouted at him in the streets of Stuttgart. In June 1896 the inventor turned in his need to the committee of the Union of German Engineers, asking them to test his model. By a strange chance his letter crossed one from the committee offering to carry out the tests in question. Before this the Count had been invited to lecture at the annual meeting of the Union held in Carlsruhe in June. He had, however, preferred to give his lecture to the Wurtemberg District Association at Stuttgart. Thus the link was at last forged which could alone help his cause. In December 1896, after much discussion and negotiation, the Union decided to issue a public statement of its

opinion of the Count's plans, and this it did in terms worthy of its high reputation.

Before reproducing this appeal, I may be allowed to insert a small interlude which tells us a great deal of our hero's inner mind and concerns. In June 1896, just at the time when this exchange of correspondence was beginning between the Count and the Union of German Engineers, we find in the diary a page of notes headed: "Remarks on views expressed in 1894 by His Excellency D. von Holleben on the internal situation." These "remarks" begin: "I too see in the advanced state of discontent among agricultural and industrial wage-earners and of many of the petty bourgeoisie and small farmers a great and imminent danger to the existing political and social order. I share the view that the authors and disseminators of this discontent must be the more energetically opposed, the less real ground there is for discontent or where it exists, as in a time of general trade depression — the less the government and employers are able to remedy it. I do not base my opinion, like others, upon the right of self-preservation — no one has a moral right to preservation at the cost of his betters

— but upon the unconditional duty of defending the existing weal of the whole community against forces which merely destroy without being able to create anything valuable . . ."

Those are characteristically Zeppelin ideas, with which we are already familiar and which I quote mainly because the letter, by which Count Zeppelin acknowledges receipt of von Holleben's "views" and communicates his own, closes with this amazing sentence: "But I thank Your Excellency cordially for the trust you have placed in me by sending me your views and for the opportunity they give me of once more occupying myself with a matter which lies much nearer to my heart than all my "airy-tales", the sole attraction of which for me lies in their being the only means by which I can serve my country."

"Airy-tales!" A strange way to speak about his work, after fighting for six years against forces visible and invisible and after trying by every means in his power to create the necessary conditions for the realisation of his ideas. It proves convincingly that Count Zeppelin pursued his airship schemes not, like a true inventor, for their own sake or under the compulsion of the technical

problem in itself, but as a means to an end: he wanted to create the airship, because he saw in it a safeguard and an enrichment of the national life. Deep within him he was always the citizen, with an almost painful sense of the duty that was his. He was like a statesman who feels partly responsible for the fate of his people. It will therefore not surprise us that many years later, when his airships were everywhere victorious in the Great War, he almost entirely forgot his invention and became wholly absorbed in questions of politics and strategy.

But to return to the appeal by the German engineers. By enlisting the aid of a wider circle it was intended to give Count Zeppelin effective support in his endeavour to raise funds for the building of an airship. And indeed that endeavour could only succeed if it had at its back the authority of some such influential body.

The appeal, which was issued on December 21st, 1896, was as follows:

"On the occasion of the 37th general meeting of our Union, in June of this year, we were requested to consider and, if possible, assist Count Zeppelin's design for a dirigible airship.

"After close examination of all the circumstances, we have decided in favour of complying with this request, though fully recognizing and appreciating what appear to be certain fundamental objections.

"It is not for the Union of German Engineers to promote individual enterprises intended to serve the interests of certain persons or groups, but, for the good of the national industry as a whole, to secure close cooperation between the intellectual forces of German technical science. We could only consider this question in complete agreement with these principles. We had two reasons for thinking that this agreement exists. Firstly, no one is expecting or attempting to obtain for himself any economic advantages — not even the refund of expenditure already incurred — from the undertaking in question; the benefit is purely general — in the development of flying technique to be hoped for from the prosecution of the present scheme and the practical application of the work comprised in it. Secondly, we are of opinion that the development of flying technique not only serves — indirectly and directly — the good of the national industry, but especially needs

and deserves in its present stage of development the cooperation of engineers and industrialists.

"In view of these considerations we have in the first place requested a committee of experts to examine the design submitted by Count Zeppelin.

"This committee[1]) has recorded in the minutes of a meeting held on October 25th at Carlsruhe the results of its studies in a number of written reports and statements of opinion, culminating in the two following paragraphs:

"'1. Count Zeppelin's model promises, as compared with previous performances by dirigible airships, if not an increased speed, at any rate a substantially longer duration of flight (about ten hours at maximum speed.)

"'2. The successful completion of the design presupposes the solution of certain preparatory questions, the answers to which through experimentation are in themselves so important to the development of aviation that the committee recommends that further steps be taken to realise the scheme.'

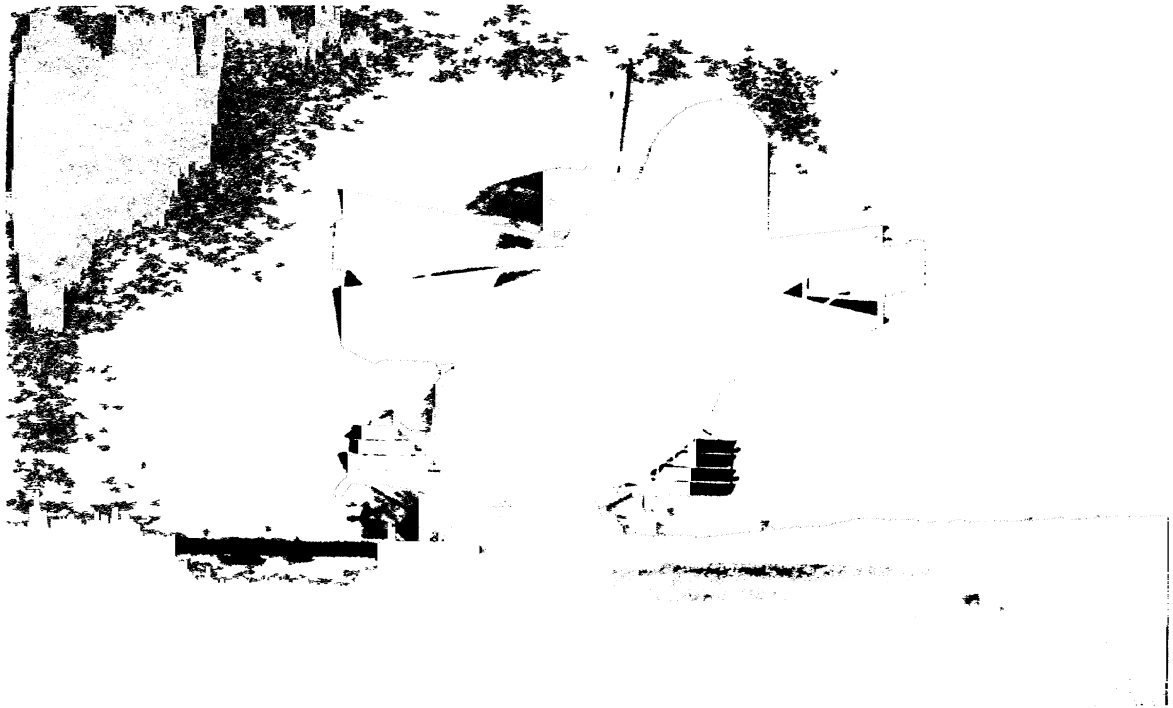
[1]) Here follow the names of the members of the Committee, omitted in translation.

"The members of the committee further declared that a decisive step towards the technical improvement of aircraft was only possible at very great expense, that the work needed to give effect to the Zeppelin plan and as a necessary preliminary thereto was expected to prove not only of direct benefit to aviation, but also to make an essential and, to many branches of science, important addition to our present most inadequate knowledge of the dynamic conditions governing moving bodies in relation to air; that the problem to be solved was therefore one for technical science and that it would redound to the honour of the Union of German Engineers to have contributed to its solution.

"The manufacture of serviceable aircraft has only quite recently come within the field of the engineer's work. Very many engineers are still indifferent towards and even sceptical about everything pertaining to aviation. Comparatively few have studied improved means of transport by air sufficiently deeply to recognize in it one of the biggest technical problems which our century is bequeathing to the next. Theoretically, it is agreed that natural laws present no obstacle and

that existing technical resources are sufficient to meet the static and dynamic requirements of airship construction. In the opinion of distinguished physicists and engineers the difficulties and objections are no greater than those which faced existing technique before the days of modern shipbuilding and railways. The object of these endeavours is: safe transport in the air, independent of all kinds of roads, at speeds hitherto unattained. Distant as this goal may seem to-day, everyone who thinks it a technical possibility, will think it worth much effort and sacrifice. The goal must be approached step by step, as in all earlier cultural advance. One such step, in the opinion of the eminent experts, which we share, would be the construction of an airship based on the Zeppelin model and on preliminary experimental investigation.

"It is out of the question that the substantial sums required for this work should be expended in accordance with purely economic considerations, that is, with a view to immediate financial gain by individuals or companies. For the technical results will no doubt be common property and not such as could be monopolised to the advantage of individual promoters.



"Hope must therefore be placed in the public spirit and self-sacrifice of those quarters which are able to help, particularly, representatives of German industry, that they may be found willing to contribute the large sums needed to assist a very important technical problem of our time and without which funds no decisive progress can be expected.

"France, North America and Great Britain have already set examples. Should not German engineering take its share in the solution of this problem?

"We appeal in this sense to German industrialists and especially to the members of our Union with the request that they will cooperate in this important enterprise.

Signed

Committee of the Union of German Engineers."

This appeal, which for all its careful wording, fully reflected Count Zeppelin's basic view of the problem, succeeded in its effect and, a little later, led to the establishment of a "joint stock company for the promotion of air navigation" under the management of a number of German industrialists.

All the same there was still so much distrust and so little desire to participate in the scheme that Count Zeppelin had to subscribe almost half of the 800,000 marks capital. The company was formed in May 1898. Kübler, the engineer, was secured as technical manager and in 1899 work was begun on the first ship at Manzell, near Friedrichshafen. This ended the initial, perhaps most difficult and at times apparently hopeless stage of the whole struggle for his idea. Now the work had to speak for itself — as it did. The battle against human distrust and human intrigues was won. There now began instead the fight against difficulties inherent in inanimate objects.

It may not be out of place to deal here shortly with a legend which continued to circulate in well-disposed and other quarters until quite recently, and after the Zeppelin triumphs, — the legend, namely, that Count Zeppelin derived many of his ideas from a less fortunate rival, the Dalmatian timber-merchant, David Schwarz. The story is connected with certain happenings during the years we have just traversed. David Schwarz, in collaboration with a far-seeing Westphalian aluminium manufacturer, Carl Berg, had constructed an

aluminium airship, which in 1896 made an unsuccessful attempt to fly from the Tempelhof field and crashed. The experiment appeared to be ended and Count Zeppelin negotiated with Herr Berg's firm for the purchase of the aluminium for his own ship. The firm, however, was under contract to supply aluminium for airships exclusively to the Schwarz undertaking. It had to obtain release from this contract by an arrangement with Schwarz' heirs before it could deliver aluminium to Count Zeppelin. That is the origin of the legend. It is obvious at the first glance that the Zeppelin ship had nothing but its aluminium in common with the Schwarz machine, not to mention that Count Zeppelin had fixed the essential features of his construction long before Schwarz' ship appeared. It is admitted that Count Zeppelin benefited from certain structural experiences of the Berg firm, just as Schwarz' machine did, too. Moreover, Herr Berg did exceedingly valuable work for Count Zeppelin, as we shall see later.

CHAPTER IX

AIRSHIP-BUILDER AND PILOT

BY July 1900 the rigid airship, Count Zeppelin's first ship, had at last become a reality and was now to give ocular proof of its vitality to enemies and sceptics. The airship's message, however, was not to technicians alone, to the aviators and experts in statics, but to the whole wide world. Gone were the long hours of silent calculation over the midnight oil, gone the period of technical, physical and mathematical tests and exercises, to which the cavalry general had to adapt himself when verging on old age; gone the days of embittered wrangling with committees of professional engineers and soldiers, who could hardly be persuaded to take a layman seriously. This "paper" period, which furnished the best and most astounding evidence of the Count's incredibly dogged determination, was now past and the struggle was transferred to the waters of Lake Constance, which

became, as it were, the stage on which a thrilling drama, lasting for many years, unfolded itself before the eyes of the world. Although I intend in this character study only to describe its main episodes, the drama, as everyone knows, was rich in exciting phases, in impressive climaxes and in sudden disasters that threatened a tragic dénouement. But the hero of the piece, the ultimate victor, became the favourite of the German people, who learnt more and more to honour him as a pattern of strength and determination. The growing interest of the public was not at first particularly welcome to Count Zeppelin. When a reporter once asked him about his future plans, he answered brusquely: "I am not a circus rider, who performs for the public; I am doing serious work for my country." But he soon came to see that lively public interest in his work might be of the utmost help to him and that among the foolish thousands drawn by idle curiosity were a number of thinking men of sound views extending often beyond the prescribed professional horizon and able to give unobtrusive, but welcome help to the inventor.

As is usually the case with any important technical invention, the problem of translating

theory into practice was attended by difficulties which looked like malice and spite on the part of Nature herself. The very start was unfortunate: the floating shed on Lake Constance, the nearest approach then possible to the ideal revolving hangar, was seriously damaged by a storm and its repair absorbed nearly 100,000 marks of the company's 800,000 marks total capital. The construction of the airship, which in the main followed Kober's design, but had flat trellis members instead of the proposed aluminium tubes, was delayed for some months by slow delivery of the material. In this way the funds were already exhausted when the trial flights began. Further, after the first flight, the apparatus by which the ship was suspended in the shed broke, and a fortnight was spent in repairing the damage done to the ship. Thus the long-awaited first trial, which was to lead to victory, ended in something like tragedy: after three short trials of altogether just three hours, the attempts had to be abandoned for lack of funds and await some final arrangement. The two main questions — whether the construction was stable enough and whether its speed was sufficient for practical requirements —

could not be definitely answered, because all kinds of small details, like the breaking of a crank-shaft and the jamming of a lateral rudder, prevented normal flying. It could only be said definitely that both its stability and steering-gear needed improving and that the speed of 7—7½ metres per second, measured more or less correctly, fell below expectations. For lack of funds and lack of faith in ultimate success the company decided in November to go into liquidation and left Count Zeppelin to his own resources.

The Count had no intention of accepting defeat and proved his unshaken confidence by buying from the company the ship and its accessories, so that he could continue his experiments. He pointed out that the ship had kept in the air without veering and had obeyed its steerage, so that the fundamental question whether such a machine was a flying possibility from the technical point of view, could be answered affirmatively. The necessary improvements in structure and steering apparatus, could, he argued, easily be made and would follow in course of time. The same applied to the speed, which would increase automatically with engine development. With undiminished optimism he

therefore again applied for help and support to the Union of German Engineers, who four years before had made it possible to form his company. He did not receive much encouragement at first, but by persistent pressure and by emphasising the hopes and beliefs inspired by his initial experiments he at last induced the Union to re-consider the matter at its annual meeting at Kiel in 1901. It adopted a rather vague resolution. It referred to the two main paragraphs (see page 206) in its resolution of 1896 and added that the committee of the Union "regarded its former findings as confirmed by the trials, but that there were not yet sufficient data for completing or amending them." Count Zeppelin interpreted this as a refusal of further aid; he had hoped for a fresh appeal to the public based on the results of his first attempt. He therefore asked for a further statement of opinion upon the reports of his first trial and for a more definite wording of the resolution. The examining committee met again and added to its decision the following paragraphs:

"In order to take account of the improvements made since 1896 in the construction of engines of the kind used in Your Excellency's airship, the

Committee has decided to add to its resolution (as above):

'In consequence of the progress in engine-construction since 1896, which has made it possible to achieve more power without increase of weight, the speed of the Zeppelin airship could be increased somewhat beyond the figure with which we reckoned at that time, and still further progress in this direction would of course mean a further increase of flying speed.

'We are voicing the wishes of our Committee and our own feelings when we express our admiration for the extraordinary energy and courage Your Excellency has shown in the pursuit of your enterprise.'"

I should like to draw attention to the very friendly tone of this resolution, even if it is noticeably more restrained than the appeal of 1896. For there is a legend that Count Zeppelin encountered, not merely lack of understanding, but humiliating treatment at the hands of the Union. This belief is based upon the fact that at the Kiel Conference two or three eminent engineers referred in unnecessarily sharp and disparaging terms to Count Zeppelin's arguments. That reproach, as

we see, cannot be levelled against the Union's official pronouncement. We may, however, ask why the Union, in spite of its own references to progress in engine-construction and to further advancement to be expected, and on which the Count always reckoned, decided in favour of such limited action? The answer, I think, is that the engineers, in view of the not very satisfactory results of the 1900 trial, felt bound to adopt the view of the Ministry of War, which was this: "The rigid airship may at some future time be the correct form of aircraft and prove its worth, if it can attain greater speed and if the efficiency and safety of the improved machine are so great as to make landings in the open country unnecessary. At present, however, we must rely upon forms of airship which in an emergency can be landed and transported in the manner of an emptied balloon, that is, the non-rigid or semi-rigid form."

Essentially, this view took account only of existing facts or of early probabilities and did not reckon with the dreams of optimists. Needless to say, it found no favour with a spirit so enthusiastic and ardent as Count Zeppelin. He held firmly to the belief engendered by long years of

work on his ship that his system was the best and the most capable of development and that the other two systems were the results of illogical and timid thinking. "What a feeble, nonsensical way of starting," he said to me once, "to assume from the outset that my machine is unreliable and for that reason to work on systems which will never be of any military use. Such a beginning is no idea for a general staff! They'll either have my ships with their huge power or they'll have none at all, for on active service how can you carry about the whole apparatus for an airship?" Thus he stuck to his plan with that "delightful Swabian pig-headedness of his," as someone put it. He felt the more justified in doing so, the more obliged, indeed, because schemes and suggestions for the building of airships were cropping up everywhere. Santos Dumont was flying around Paris with his little dirigible balloons, the French War Ministry was financing the building of various types of airship and, even in Germany, the "non-rigid" and "semi-rigid" types of Major von Parseval and of the air battalion were in the making. The idea of the airship, which ten years before had stamped Count Zeppelin as a "candidate for a lunatic

asylum," had meanwhile been acknowledged a serious problem for engineers. How could the rigid airship, in its inventor's opinion the best, not complete in this rivalry? It was the more bound to do so because the Count could by this time (1903) entertain reasonable hopes of having much more powerful engines available for his next endeavour than he had had for his first ship. The light petrol-driven engine — the father of aviation — was on its way. Zeppelin's hopes were beginning to be fulfilled. Now at all costs he must hold out and persevere.

But how raise the necessary money? A desperate effort to obtain it from the German people in the same way as in 1896 was a miserable fiasco. An appeal for 60,000 marks, circulated to leading men of wealth and position and enclosing stamped postal cheques for replies, brought in 8000 marks. Many of his letters were returned with derisive comments. An appeal "to save aviation" published by Count Zeppelin in a weekly periodical in September 1903 fell on deaf ears. Not without emotion do we read to-day this cry from the depths of his soul: "A short spell of rough weather, storm and waves will have rendered my whole stock of material useless.

My last trained assistants will have left me. The last sums that I can sacrifice for this purpose will have been spent; old age or death will have set a term to my labours." The mass of the people were still deaf to such entreaties. In the eyes of most of those who, five years later, proclaimed Count Zeppelin a national hero, he was at that time an infatuated fool. Instead of help he received mockery and abuse. The Zeppelins seemed doomed to perish ignominiously. For what could now save him?

Nothing but the indomitable will of one man, who, unshakably convinced that he was right, would not rest until he had reached his goal. The manufacturers of his materials, first and foremost Berg, the aluminium merchant, and the engine factory, gave him his building materials free of charge. Next the King of Wurtemberg permitted a state lottery, which brought in a net profit of 124,000 marks. Most of the German states allowed the sale of tickets in their territory and Prussia, who refused this permission, made a special grant of 50,000 marks instead. Even the Prussian War Ministry was moved to lend gas-fillers gratis. The rest of the estimated cost of 400,000 marks came from the

Count's own pocket. It was recognized as the last and supreme effort of a man of tremendous determination and with very wide connections and it was universally assumed to herald a last decisive triumph. If he failed this time, the game was irretrievably lost.

The new machine was begun in 1905 and completed in the late autumn. Constructively, it was very much stronger. At Count Zeppelin's own suggestion, the clever and resourceful engineer Dürr, who was now in charge of building operations, chose instead of flat lattice members triangular members with U-shaped and squared edges, connected by tubular stays. This and the addition for the first time of an under passage-way substantially strengthened the body. Various improvements, particularly in the steerage, added further to the chances of success. But the Count's especial pride and joy were the 85 h.p. engines to replace — and at less weight — the former 15 h.p. engines. The weight was actually reduced from 26 kg. per unit of horse power to 5 kg. This allowed more powerful and larger propellers with almost three times the diameter of the former ones.

It will readily be understood that with these

enormous improvements Count Zeppelin looked forward to the trials with the utmost confidence. Who could guess that instead of the triumphant success he was expecting there lay in store a disastrous defeat, so utterly destroying his work at a single blow that recovery seemed impossible? The very first attempted flight in November 1905 was attended by misfortune: Owing to a blunder in launching the airship from its shed, the machine failed to rise and was carried along the surface of the water far out into the lake. It was with difficulty recaptured and brought back to the hangar comparatively undamaged. A second attempt was made in January 1906. It proved a catastrophe. Having risen quickly some hundreds of yards into the air, aided by its great buoyancy, the ship encountered a strong westerly wind, against which it could make no headway, as one of the engines stopped. The machine was quickly lowered and had to make a forced landing near Kisslegg in the Allgäu. The wind increased during the night to a gale and within a few hours the airship, which had made a surprisingly good landing, was totally wrecked. Outwardly calm and resigned, the Count gave orders that it should be completely demolished.

All seemed over. A Berlin expert, who had been an enemy of the Count from the beginning, wrote to the papers with well-feigned sympathy: "The attempt, which unfortunately ended in the wreck of the beautiful ship, has no doubt shown that we are not yet in a position to make huge rigidly built airships of this kind which will be dirigible. Nevertheless, Count Zeppelin's untiring efforts, even if they have not so far succeeded, have been of great value, for they have supplied a comparatively early answer to the question whether we should build rigid or non-rigid airships."

That was the opinion of an expert concerned with his own interests, and it was the opinion of everyone else.

At first, even Count Zeppelin shared this view, completely overwhelmed by this hard stroke of fate. "I shall build no more airships," he said, as he gazed sadly upon the wreckage of his machine. But he would not have been Count Zeppelin if he had allowed a mere accident and a few blunders, which were soon explained, to undermine the conviction gained from years of serious study and computation. He could not have made a false reckoning! What then had really happened?



"Through carelessness or inexperience the crew had piloted the ship up into a strong wind and, when she rocked in the troubled atmosphere, nervous and faulty steerage caused her to pitch more and more — artificially as it were — so that she could not make headway against the wind, when one of the engines failed. Otherwise, everything passed off well under most unfavourable conditions; the structure stood the test splendidly and even the forced landing was astonishingly successful." That was how the Count told me the story a few weeks later, and he added: "I *shall* go on building!" But where was our good old friend to find the means of carrying on? Then something happened that can only be called a miracle. The Count succeeded in convincing the War Ministry that this disastrous flight had really proved the utility of his airship, and he extracted from it a promise to sponsor a lottery in Prussia with a view to raising half a million marks.

Various obstacles had first to be overcome and there followed a long period of ups-and-downs, of hope alternating with despair, of constant begging, entreating, struggling. I met the old man one dark evening in the spring of 1906 on the

Friedrichshaven road. He was walking along, the picture of an old, old man, tired and downcast, with none of his usual erect gait. He spoke bitterly of continual disappointments and intrigues; he did not see how he could carry on and would seriously have to consider throwing up the sponge. "Yes," he burst out, "I shall not go on building any more. The world shall never know how good my airship is!"

But he did go on! For the sky cleared again, despite the abandonment of the promised Prussian lottery. The King of Wurtemberg agreed to another state lottery and the Count, with his invincible optimism, began building again at his own expense without even waiting for the lottery proceeds.

In October 1906 the new, third airship was completed. It was essentially the same ship as the one that had come down at Kisslegg, except for one very important improvement, suggested by the pitching and veering of the ship in the wind during its unlucky flight. It had already been found in France that so long a ship tended to turn on its axis during flight, a tendency which had to be checked by the constant use of the rudder, and which on

that account made it impossible to attain great speed. This in the last resort was the cause of the trouble in January 1906. The remedy lay in affixing "stabilising wings" in the stern of the ship corresponding to the feathers of an arrow. This device at first appeared in the form of horizontal double wings on Z 3, in order to reduce pitching, while it was hoped, by the better working of the lateral rudders, to avoid horizontal veering. Very soon, however, this tendency, too, was checked by the attachment of vertical steerage-wings.

The ship made her trial flights on October 9th and 10th and these, at last, were successful. Flying with extraordinary steadiness and ease, the ship each day covered nearly 100 km. in two hours, corresponding to a speed of 11—12 metres per second. It was a striking success and victory seemed won. This was quickly reflected in the changed attitude of the authorities, as we shall see, but the triumph made an even stronger impression upon the public mind in Germany. This it was perhaps that determined the further progress of the Zeppelin enterprise and it played a decisive role during a later crisis. The German public had followed the preparations for a second attempt at the end of 1905

with no particular sympathy, merely a somewhat malicious curiosity, and their response to the mishap at Kisslegg was, at best, a passing regret, accompanied in many quarters by disparaging and spiteful comment. But the splendid courage with which the old general faced the catastrophe had aroused in many people something like admiration and, when it was reported that he intended to carry on undaunted, there was general amazement as at something incomprehensible, something altogether out of the ordinary, something with an element of greatness in it. The strange phenomenon began to be discussed with growing warmth; sides were taken, one party pointing to the incurable folly of the obstinate inventor, the other admiring his strength of character. The former, it is true, were in the great majority. And now came this success of October, which seemed to justify the sturdy old fighter. Large numbers of people rallied in his favour, the more readily because their admiration was mingled with a certain pleasure in being able to back an honest Swabian against the ill-will and lack of understanding of the unpopular Prussian military. That at least was the mood in Wurtemberg in the first decade of the

twentieth century. The Count was becoming a popular idol. A feeling was born which found expression two years later in the words of a journalist recording a small passage of arms at Manzell (witnessed by angry onlookers) between the Count and the Prussian Minister of War von Einem, who was annoyed at having been kept waiting. The journalist reflected the sentiment of the crowd in these words: "This Prussian general treated the old gentleman with unheard-of arrogance. He has no need to come here, if he is too busy. Who is he, anyway? Very shortly there will be talk of only one man ("von Einem"), and that will not be General von Einem!" The old count observed this growth of partisanship in his favour with mixed feelings. Deep in his heart he hated the least suggestion of demagogy and, when an officer sent from Berlin once hinted that Count Zeppelin "was swayed by the mob," he confessed ruefully: "Unfortunately, I have no choice, so long as the authorities in Berlin show so little understanding and imagination."

However, Berlin, impressed by the October flights, which again had to be suspended for lack of funds, now began to show some understanding.

The "Motor Airship Research Committee," appointed at this time under the Emperor's patronage, was instructed, as its chief duty, to proceed with the non-rigid Parseval airship, but it was realised that something too would have to be done for the rigid form. First, a supplementary budget voted 500,000 marks to provide Count Zeppelin with a new floating shed on Lake Constance in place of the old half-destroyed one and to meet the cost of further trials. After a good deal of negotiation, in which the Chief of the General Staff expressed strong views, an agreement was at last concluded, by which the Count undertook in 1907 to make a number of short flights to determine the ship's flying capacity, followed by a non-stop flight over not less than 700 kilometers, in order to prove that the ship was of military value.

The floating shed was finished by September 1907 and the trial flights began at the end of that month. They terminated for the time being in an eight-hour flight, which, like all the others, passed off well. The prospects of success were thus greatly enhanced. Owing to the late season the Count asked permission to postpone the twenty-four hour trial until the following year. Was it really

unfriendliness and ill-will which made the Ministry of War demur at the Count's reasons for his request and demand of him a frank admission that his ship was not capable of carrying out the flight of twenty-four hours? To-day we must openly acknowledge that Z 3, taking off from the Lake of Constance, at an altitude of 400 metres, would have been hardly capable of carrying with her sufficient fuel and ballast for a twenty-four hour flight. We must suppose that the autumn mists provided Count Zeppelin with a very convenient argument for postponing the flight. For at about this time he submitted a report to the Chancellor, urging *inter alia* the need of building without delay a larger and more powerful ship. With vigour and skill he profited by the existing goodwill to take a further step towards the building of ships approaching more closely to his ideal and to escape from his eternal money troubles and wretched hand-to-mouth existence. And now, let us note, his words no longer fell on deaf ears. The trial flights of October 1906 and September 1907 had had their effect. In October 1907 all the departmental ministers and secretaries concerned, with the Chief of the General Staff and a number of officers and

expert advisers, met under the chairmanship of the Secretary of State for Home Affairs to consider a plan for giving substantial aid and encouragement to the Zeppelin work. A proposal was made to grant Count Zeppelin: (1) 400,000 marks to build and experiment with a new ship; (2) 2,150,000 marks for the purchase of both ships, this sum to include 500,000 marks compensation to him for his fifteen years of work and expense. After a long discussion, during which many friendly references were made to Count Zeppelin's services, the proposal was adopted and was later approved by the Reichstag, though the cautious Minister of War, influenced by his advisers, desired that the purchase of the two ships — LZ 3 and the not-yet-built LZ 4 — should be conditional upon the successful accomplishment of a twenty-four hours' flight.

Accordingly, the prospects of the enterprise at last looked brighter and it seemed once again, as in the case of the first ship, as if the decision to proceed with the work would depend upon the performance of the ship herself. What were the chances? Critical observers remained sceptical, the Count feared only unkindness from the elements

and once said to me: "It is now my duty to prepare and foresee everything as carefully as possible. I must do nothing without absolute certainty of success, for the future of my ship depends entirely upon a successful issue to the twenty-four hours' flight."

The new ship, with which alone the flight could be made, was expected to take yet many months to build and the Count meanwhile turned to other work. Before all else he sought to place his enterprise upon a sound financial and business footing and he established connections with a view to forming a building company from which the Reich would obtain the ships it required in the ordinary way of trade. However, negotiations with Krupps of Essen and with the Carl Berg firm of Lüdenscheid fell through, certain conditions regarding preferential prices, etc., which the Reich as buyer thought fit to demand in view of the sacrifices it had already made, being unacceptable to the firms in question. Thus the Count, who had never favoured the thought of being in a measure dependent upon other partners, remained sole owner of his building works.

Meanwhile, in spite of unwelcome delays, the

new ship was nearing completion. A winter storm had partly sunk the floating shed, a number of pontoons capsizing. LZ 3 received serious damage, and months of repair were needed before she could be moved to the building yard to make room in the hangar for the new ship. It was a warning that the elements had still to be reckoned with!

At last, on June 20th, the fourth airship was ready to go up. She contained numerous improvements upon her predecessor. The strength of the framework was increased by continuing the passage-way under the whole length of the ship. Flying stability was improved by large horizontal and vertical fins, while vertical and lateral steerage was made more efficient by larger and better-placed wings. The two engines were increased to 105 h.p. each, with less weight per unit of horse power. Considering, further, that the building material was of better finish and quality and that the size of the ship was increased from 11,300 to 15,000 cubic metres, permitting of an increase of load by some 2000 kg. the Count could confidently assume that he would be able to meet the requirements of the test without difficulty.

And the first flights promised very well indeed.

After a few short trials, which proved the ship's excellent steering qualities and produced a speed of about 13 metres per second, Count Zeppelin decided upon a longer flight as a preliminary to the twenty-four hours' trial. Magnificent weather on July 1st emboldened him to attempt a flight over Switzerland. He flew over Constance and Schaffhausen as far as the junction of the Aar and Rhine and then ascended the Aar valley into the heart of Switzerland. Quite unexpectedly he appeared at midday above Lucerne, and there an international public of many thousands, at first struck dumb with astonishment at the sight of the great silver bird sailing majestically beneath the blue sky, greeted the spectacle with tremendous enthusiasm as the miraculous fulfilment of one of man's oldest dreams. Excited telegrams announced the inventor's triumph to the world. The ship then passed serenely towards the north-east and continued her flight across the Horgen pass, over Zurich and Romanshorn, landing late in the evening smoothly and safely at her shed on the lake after a twelve hours' flight. In its effect on the public mind the flight had been an unexampled triumph and we shall not be far wrong in believing that it

was in the last resort this flight which determined the fate of the Zeppelin enterprise for years to come. The German people read with enormous pride of the impression made upon the whole world. So Count Zeppelin was a genius, prevented only by the authorities from making his way! He must now be honoured and proclaimed as a popular hero. Enthusiasm reached high-water mark a few days later, when on July 8th the old gentleman celebrated his seventieth birthday. Congratulations poured in upon him from all sides. Deputations followed each other, bringing him the good wishes of societies, municipalities and universities. Cities named streets and squares after him and offered him their freedom. The King of Wurtemberg sent a telegram, in which he voiced the feelings of his subjects when he wrote: "I feel to-day most strongly impelled to send you my heartiest and most sincere congratulations. I know that these good wishes are shared by my whole kingdom. We all regard you with pride and admiration. May you be spared yet many years. It is my pleasure to confer upon you to-day the golden medal of arts and sciences as an outward sign of my deep homage."

Such were the feelings and, with them, the ex-

pectations of the German people, when the ship at the beginning of August started on her twenty-four hour flight. She had already made two attempts, but, owing to minor steerage and engine trouble, had returned after a short time in the air. The Count knew what was at stake and wanted to take no chances. At last, on August 4th, he took off. The route lay down the Rhine as far as Basle, thence over Strassburg to Mainz, where it was arranged to turn back, making the total flight 700 kilometres. The whole way the ship was greeted by acclaiming crowds, pealing bells and waving flags. All Germany was looking with the mind's eye southwards, as the airship passed down the Rhine valley, and was kept constantly informed of the steady progress of the flight. All went well till evening. The ship was then compelled to come down temporarily on the Rhine, near Oppenheim. As the result of intermittent trouble with one of the engines, she had climbed rather high and had let out too much gas and, in the cool of the evening, the cooling off of the gas had made the ship so heavy that she could not be kept up either by the engines or by discharging ballast; moreover, one of the engines failed again. The machine dropped,

and only very skilful steering brought her safely to a standstill between two embankments on the Rhine. The crowd held its breath. What had happened? But the airship lay safely on the smooth water between the dams; the repairs were quickly effected and she was able to ascend again, though only after discharging much material and some of the passengers. At midnight she reached the turning-point and began her homeward flight. Near Mannheim, however, one of the engines again stopped, this time permanently, through the loss of a bearing, and the ship with her one engine could only make ever slower progress, for a headwind was gathering force. It was decided to steer for Stuttgart and land near Obertürkheim so that the Daimler works might repair the engine. Early in the morning the ship again made a safe landing in open country and was anchored in the fields. There she lay quietly in a southerly breeze guarded by soldiers sent from Stuttgart. It was hoped that, the repairs completed, a fresh ascent might be made in the afternoon, and the Count, reassured, had gone to take a little rest and deal with his mail in an inn at the small town of Echterdingen near by. In the afternoon, however, the

south wind began to freshen and a dark bank of cloud rolled up from the south-west. Suddenly a squall arose, caught the ship sideways and tore her from her moorings, in spite of the men's desperate efforts to hold her down. She was carried 200 yards or more into the air and then, probably through the action of a valve, sank and struck her nose against the top of a tree. At the same moment flames shot out at the point of impact, spread rapidly to the whole ship and in an incredibly short time destroyed her utterly. A heap of smoking wreckage lay about the field.

It had all happened with such bewildering suddenness that no one had thought of sending for the Count when the storm first broke. Now they fetched him. Silent and appalled, the crowd made way for him, as he approached with eyes fixed on the ground. Who can guess his thoughts as he stood before the smouldering wreck of all his hopes? Without a word Count Zeppelin, suddenly become an old man, left the scene of horror and returned to Friedrichshafen. In a trance he heard voices at the station speak words of encouragement and promise him the nation's aid. Not until he was seated alone in

his compartment did he try to envisage what had happened and what must in all likelihood be the outcome. And the result of his reflections was tragic indeed. Even in flight his ship had proved unequal to the purely static problems that arose when the normal cooling of the gas set in at night-fall and when at the same time an engine stopped. Nor had she been able to reach port safely when the wind rose and an engine again failed. Clearly, the engines lacked both speed and reliability. How far he still was from his dream of a ship with engine power equal to any changes of wind and temperature and able to fly in all weathers far enough and safely enough to reach a sheltered port! Now, of course, he would not be paid the sum voted for the purchase of the two ships, and how could he hope to persuade the government to give him further aid on the promise of better airships to come? The future looked grey and hopeless and it was with despair in his heart that he reached his building yard, to be received by a sorrowing and sympathetic crowd of mourners. Great preparations had been made at Friedrichshafen to give him a triumphal reception. The whole town had been beflagged and thousands had come from

far and near to acclaim the home-coming of the airship and her owner. In the evening when the sad tidings were first received, flags were quietly furled and silent grief brooded over the town.

The Count went into his office and turned mechanically to the pile of telegrams that awaited him. As he read, he could at first hardly grasp the meaning of what had been wired to him from all over Germany. An amazing thing, almost a miracle, was happening in every part of the country. Offers of money to complete his work came from all quarters, money to an amount and given with a warmth of feeling which he had not in his wildest dreams thought possible. Overcome with joy and gratitude, he leant back in his chair, tears running down his cheeks. And how splendid was that spontaneous response of the nation, with what a sure instinct did the people recognize a great character, ever eager to honour and admire such characters, often disappointed, but never losing faith. Did it show a real understanding of the meaning of the Zeppelin dream, or was it rather homage paid to the spirit of a man whose genius appeared in the intensity and single-mindedness of his invincible patriotism?

To Count Zeppelin the origins of this popular demonstration were of no account; that night be felt only the magnitude of this tribute to his work and relief at being at last freed from his cares and anxieties.

I got back late that night from Stuttgart, where I had already heard of the campaign that was to be launched to help the Count. In the morning I visited him in his office and said, as I greeted him: "I congratulate you, Sir, on your success." He looked at me at first in some surprise, but a sly smile broke over his face, and he said: "Yes, here, you see, are already over 100,000 marks, and more is promised. If it keeps on like this I shall end by having as much trouble to spend the money wisely, as I formerly had in raising it."

Plans, however, were on foot to save him this trouble. When after only a few days the national fund had grown to several millions — consisting of any thing from small savings-bank accounts to single gifts of 50,000 and 100,000 marks — the suggestion was made in Berlin and approved by the Emperor that a Trust should be formed to supervise the proper use of the money, especially in a technical sense, "in order

to avoid another failure." The Count showed great tact and perseverance in frustrating this intention, in which he saw a restriction upon his freedom. It was true too that the money had been subscribed as proof of public confidence in the stout-hearted inventor and to be used as he thought best. The mere suggestion of interference from Berlin was like a red rag to many people in South Germany, as appeared from indignant press comment. It was therefore arranged that the Trust should be a pure formality, and the whole amount, now grown to six and a quarter million marks, was invested in a "Zeppelin Foundation", which at once allocated three millions to establish the "Luftschiffbau-Zeppelin-G. m. b. H." (the Zeppelin Airship Construction Company, Limited).

The purpose of the Foundation was, quite generally, to promote aviation, and Count Zeppelin reserved to himself the exclusive direction of its business in accordance with his own wishes and ideas. He secured the services of an exceptionally able and energetic business manager in the person of Alfred Colsman, a Westphalian industrialist, and son-in-law of Herr Carl Berg.

The Count's work was now to all appearances guaranteed, especially, too, when the War Ministry, despite the unhappy issue of the twenty-four hour trial, adhered to its decision to take over the two airships after such trial, that is, the third and the fifth (to be newly built), the sum of 2,150,000 marks allocated in the budget to be then handed to the Zeppelin works.

The peace, if we may so call it, thus concluded with the governmental authorities and engineering experts, was solemnly and conspicuously crowned by a visit to Friedrichshafen from the Emperor in November, when he conferred on Count Zeppelin the high order of the Black Eagle. In his speech on this occasion he spoke of the Count as "the greatest German of the century" and extolled him as a shining example of patriotic devotion. It should be mentioned in this connection that, some days before the Swiss flight, the Union of German Engineers had decorated the courageous builder of airships with the highest distinction it had to offer — the Grashoff medal. Conscious of the flattering recognition accorded to him by engineers and professionals and of the admiration and homage bestowed upon him by

the German public, Count Zeppelin at the end of 1908 might well have felt triumphant and in sight of the goal of all his effort.

Was he even then inwardly so sure of undisputed victory?

CHAPTER X
FULFILMENT AND END

PUBLIC opinion, which had been so unmistakably and generously expressed in the Echterdingen People's Fund, was in striking contrast to the views of the experts, both real and self-styled. Among the latter a former colleague of Count Zeppelin wrote a long article in a widely read paper on the unfortunate twenty-four hours' trial flight, saying among other things: "The flight ended as cool-headed experts had foreseen. The rigid system is no good, as even Count Zeppelin's most fervent admirers must now realise. When the engines fail, it must be possible to convert an airship into a free balloon, in order that it can land and berth successfully. That is impossible with the rigid ship. We must therefore be modest and be content with ships of lesser capacity, like the adherents of the 'non-rigid' and 'semi-rigid' system. Moreover, even if all had gone well, the Count could never have remained

twenty-four hours in the air. I give his airship, which is too heavy and cannot carry enough ballast, at most eighteen hours. If the catastrophe teaches us that the rigid system in its present form is not the way to attain genuine motor-propelled aviation, then to-day (i. e. Echterdingen) will not have been in vain."

There is no need here to comment upon the earlier of these statements. They are the familiar objections to which Count Zeppelin could rightly reply that the non-rigid system was also incapable of use in war and that, the moment it became so, the same conditions would apply to a serviceable ship of the rigid type. The latter must evolve from itself. "Free balloons with an auxiliary engine will not make military airships."

But the last three sentences of the article are, as they stand, definitely wrong and are written by a balloonist who has not yet learnt to think 'engine-mindedly'. They do however contain one element of the truth. "If all had gone well," that is to say, if the engines had kept going, it would in all probability have been possible to prevent the ship from rising too high and thus losing too much gas and also from falling when the cold night-air set

in and the ship became over-heavy. But supposing the weather conditions had been more unfavourable, supposing, for example, rain had been falling when the air cooled towards night? In that case the ship could hardly have been held up. And, even if the engine had not failed, how would the airship have fared in the freshening south-west wind and in the squall that tore her from her moorings? She would hardly have made Friedrichshafen! What she lacked was speed, which would have given more power to meet changes of temperature and would have allowed the ship to make headway against increasing wind. LZ 4 in her actual form and capacity was not a practical proposition. We know to-day only too well that a wind of more than 10 metres per second in the upper atmosphere is an almost daily phenomenon and not exceptional, as was then optimistically assumed, and that airships do not begin to be practicable until they attain a speed of twenty and more metres per second. The engines needed to be not only more reliable, but above all more powerful.

The Count knew all this perfectly well. So far, as he himself and the more perspicacious among his subscribers knew, only his principle, his system,

had triumphed. The ships had now to be gradually improved and made more powerful until, in accordance with their creator's idea, they could reach their destination even in bad weather and could, if necessary, keep in the air for days and cover long distances. That was the task on which the money was to be spent and to which many years of work were to be devoted.

But before that day dawned, came constant setbacks and mishaps, which gradually more and more undermined the general confidence and ended by pouring so much gall into the cup of Echterdingen enthusiasm that in a few years the attitude towards the rigid airship was almost what it had been at the time of the Kisslegg disaster.

The claims upon Count Zeppelin's powers of endurance must have been almost greater during this period of temporary defeat than at any other time. For what is harder than to see success slip from our hands just when it seems at last to have been securely grasped? In the heat of the fight, when nerves and muscles are taut, neither the body nor the soul is so sensitive to blows, and righteous anger and the lust of battle dull the emotions. But what self-command and self-restraint are

required to appear calm and to preserve outward balance when the cruel elements and remorseless logic, which governs even the fate of imperfect creations, compel a man to look on in more or less passive endurance as he sees his beautiful dream slowly dissolve before naked and relentless facts.

And again, if it is hard to win public opinion, how much harder is it to keep it when won, should that opinion begin to waver under the influence of disappointment. How quickly and with what violent hatred do the hosannas of the multitude give way to cries of "Crucify Him," when public favour, fickle as it is, begins to veer. Disappointment, like scorned love, seeks comfort in petty revenge.

During the years that followed Echterdingen, I had frequent occasion to watch the old Count with mute admiration as misfortune dogged his enterprise and he had to fight hard not to despair of his cause and to pretend not to notice that the German people were losing their faith in him. It was a time when this proud spirit and true aristocrat looked with a certain anxiety for signs that he still retained the respect and affection of his beloved

compatriots. Adulation always carries the seeds of its own self-correction, but it calls for a large measure of philosophic calm to accept with dignity and restraint a reaction of this kind, which always threatens to pass to the other extreme. The Count observed this restraint, only once or twice yielding to a momentary urge towards self-assertion and claiming what he thought to be his right to recognition and respect. I watched him, often admiringly, often touched, and saw in his attitude the modesty of a truly great nature. How few are those whose self-criticism and modesty can resist the plaudits and noisy demonstrations of popular favour.

I now propose, so far as is possible in this character study, to survey the events that followed Echterdingen.

Building continued at Friedrichshafen at high pressure throughout the autumn of 1908 and winter of 1908—9. In the spring of 1909 LZ 5 was completed, a faithful copy of the ship that had been burnt at Echterdingen. LZ 3 had been taken over by the army, but a twenty-four hour trial flight was necessary before purchase of the second ship. Count Zeppelin decided to carry out a long flight

on his own. The new ship left her hangar in the night of May 29th and cruised away — none knew whither. She passed further and further northwards and before long the wires were buzzing all over Germany and the populace were following the flight with eager interest. A rumour spread in Berlin that the Count would land there. The Air Service received orders to prepare for the landing and hundreds of thousands of people gathered on the Tempelhof field, including the Emperor and Empress with their family. After hours of waiting, word came that the airship had turned at Bitterfeld and was on her homeward course. Much disappointment and indignation were expressed, not least by the Emperor. The Count, however, had never meant to land at Berlin, still less announced his intention of doing so, and he was already cruising home unawares while the crowd waited in feverish excitement on the Tempelhof. A newspaper had published the false report and, the wish being father to the thought, the capital had too readily believed it. And now was added to the disappointment a piece of news little calculated to increase enthusiasm for the Count and his work: when landing near Göppingen to refuel, the ship

had struck a pear-tree and been seriously damaged! It was the first test of Zeppelin enthusiasm and it survived it well when it became known later that emergency repairs had been carried out and the ship had been able to regain her shed at Friedrichshafen the next day. She had flown for more than fifty hours, made a forced landing and undergone substantial repairs in the open country. That was just what the old fellow had always said! Any ill-feeling was finally dissipated when the Emperor extracted a promise from the Count to make, in the terms of His Majesty's request, "brilliant amends to Berlin" that same year.

The erring ship was quickly put in order, taken over by the army as Z II and removed to Cologne. Even the transfer led to conflicting criticism, when the airship at her first attempt was prevented by a strong headwind from reaching Cologne, and had to turn back. Still, she had stood up well to bad weather and proved herself airworthy. For the rest the enthusiasm of Cologne, when the airship at length arrived, dispelled any lingering doubts.

Meantime LZ 6 was rapidly completed and in August made ready for the promised flight to Berlin. The airship had then not really been fully

tested. The new "steel band drive" was a special source of anxiety and might easily have caused complete failure. However, although a propeller flew off in the air, the flight was successfully accomplished and, after an intermediate landing at Bitterfeld, where the Count himself came on board, the ship reached Berlin in safety. The welcome there was one of unbounded enthusiasm and the old gentleman, escorted to the Castle by the Emperor, came out on to the balcony to receive an ovation from the capital.

Unfortunately, the flight home was not so smooth and the ship passed through many anxious hours. Near Bülzig a propeller again flew off and pierced a gas-cell, which emptied. Major repairs had to be effected in the open, made all the more difficult by a thunderstorm which broke over the airship as she lay at anchor. But all passed off well, probably because the ship, through loss of gas, lay too heavy on the ground for the storm to lift her. Hundreds of soldiers held her down and sought to avert mishap. Thousands trembled with anxiety and only breathed freely when they saw the machine once more safely aloft. The old Count was spared what might have been a bitter blow.

After a successful home-coming the airship was used to carry many members of the upper and lower houses of parliament on flights over Lake Constance, and the rejoicing and excitement rose to new heights. The year 1909, after many a threatening crisis, came to a happy close, and public feeling maintained its high level of enthusiasm.

Alfred Colsman, business manager of the Zeppelin building company, exploited this feeling with much skill and energy to bring into existence a body which was ultimately to prove the salvation of the Zeppelin, despite several difficult situations of its own making. This was the "Deutsche Luftschiffahrts-A.-G." or "Delag."

A company of the kind had become necessary in order to secure orders for the Zeppelin Construction Company. The army was refusing to order more ships and the navy still hung back, not yet satisfied with the ships' performances and also because Herr von Tirpitz, in charge of the Admiralty, had no opinion of airships.

"Delag" was intended to acquire passenger airships, first for making circular flights from individual cities, and, later, for maintaining a regular service between these cities, which were all

to build an airshed. How strong was the faith in the possibility of such services is shown by the fact that quite a number of large cities contributed capital to the formation of the company, and its twenty-seven original directors included the burgomasters of nearly all the chief towns of Germany. We know now that an airship service over such short distances is economically impossible, apart from the fact that the aeroplane, of which no one then thought seriously, subsequently arrived to claim this branch of aerial traffic.

The company, which included municipalities, banks and private persons, was formed in the late autumn of 1909 with a capital of three million marks. An order was at once given for the construction of an airship to measure 19,300 cubic metres, with three engines each of 120 h.p.; the ship was named "Deutschland" and made her first trial flight in mid-June 1910. Her home was Düsseldorf, where a hangar was erected for her on Golsheim Heath. Her dimensions and her three engines offered every possible guarantee of capacity and reliability.

The year 1910 therefore opened with good auspices. But it held misfortune in store for the

Zeppelins. In April news was received that Z II, landing during a practice flight near Siegen, had suffered shipwreck. She had been carried away by a storm and made a forced landing, in the course of which she was several times lifted high and smashed to pieces by squalls. It was sought to impute the blame to bad piloting, but the military authorities blamed the system.

The "Deutschland," it was hoped, would remove this bad impression, but on one of her first ascents from Düsseldorf at the end of June, she ran aground in Teutoburg Forest.

Here again the cause was a sudden change of weather during the flight, coupled with engine trouble. The airship was carried up by a strong headwind, against which she could not develop sufficient speed and, owing to the ensuing loss of gas combined with heavy rain, became so heavy that, in spite of discharging all possible ballast, she could not keep up. Fortunately she fell among trees; otherwise the accident would almost certainly have caused loss of life.

LZ 6, which had made the flight to Berlin, was immediately delivered to "Delag." The ship had meanwhile been lengthened by a section and had

been given a third engine, which seemed to provide her with sufficient carrying capacity and reserve of power for passenger flights, granted the necessary care was exercised. She did in fact make several flights from Baden-Baden and was just beginning to restore the confidence that had been so badly shaken, when in mid-October she burst into flames in her shed through the gross negligence of a mechanic. This occurrence first emphasized the inflammability of hydrogen.

But this was not the last of the series of misfortunes. After the loss of its first ship the "Delag" company straightway commissioned a second. This, too, was named "Deutschland," when launched in the spring of 1911. She was a sister-ship to the first "Deutschland" and by her very name was intended to symbolize Germany's pride and faith in her Zeppelins. She made, too, more than thirty successful flights from Düsseldorf. But in the middle of May, while being brought out of the shed, the airship was crushed against a wall and so badly damaged that she had to be taken to pieces. The situation, already strained by the previous accidents, now became critical. Even the generous board of the Delag,

which from the first had reckoned with setbacks and had been prepared to part with money for the sake of experience, hesitated long before venturing to order yet another ship. When it finally did so, it was for two reasons. First, the directors, many of whom had a strong technical interest in the matter, had now been, so to speak, "bitten" by the problem and felt the more impelled to continue the battle along Count Zeppelin's lines since great progress had just at that time been made in the matter of engines, and much had been learnt which might serve to avoid future disasters. Secondly, and this was no doubt the main reason, the directors were influenced by their personal regard for the old Count. At this time, more than ever, his behaviour had been such as to win, rather than lose, the respect and affection of all discerning persons, and his board was now anxious to do him a kindness and help him in his difficulties. The situation at that time was really almost as described by the French airship builder Surcout, who, after the crash in the Teutoburg Forest, wrote: "In Germany there are no longer friends of the Zeppelin airship, there are only friends of Count Zeppelin himself." There was something irresistibly touching, some-

thing which compelled increased respect, about a man who, when fate dealt him one hard knock after another, preserved a calm dignity and, far from criticising the unlucky pilots, sought rather to comfort them and succeeded in filling them with new courage and the hope of doing better next time. The directors stuck to him and his airship for his own sake, doubting, in some cases, perhaps, but all the same to good purpose. For success now came with the new Delag ship, the "Schwaben." It was almost like a dispensation of providence: Zeppelin, the "separatist," who had suffered shipwreck with his "Deutschland," was to win the fight with his "Schwaben."

Count Zeppelin's ideas and claims on behalf of a rigid airship had advanced far ahead of their time and of the knowledge and technical possibilities of that day. Setbacks were therefore bound to follow on the triumphs of 1907. They set in with the accident at Echterdingen, and, as the Count well knew, it was for the days that followed to make good existing defects and omissions. Optimism, which inspires and must inspire all inventors and pioneers, often led to an under-estimation of dangers and difficulties and, in those dim distant years when

the first bold vessels ventured into the uncharted ocean of the sky, fate was challenged more often than was realised. It is almost a miracle that accidents were not more numerous and more serious than they in fact were.

The accidents already mentioned and those that occurred later may almost all be attributed to three causes: insufficient engine power, ignorance of meteorology and difficulties in manoeuvring the airship on the ground, particularly when entering and leaving the hangar.

The Count and his staff now devoted all their efforts to increasing the power of the machines. Aviation stands or falls with the engine. A better, that is, more powerful and at the same time more dependable engine had to be produced. The well-known builder, Wilhelm Maybach, was secured by the Count and the result was the Maybach-Zeppelin-Motor, first manufactured in a special workshop, later by a daughter company of the "Luftschiffbau-Zeppelin," known as the "Maybach-Motorenbau," under the technical direction of Karl Maybach, junior. Engine weights were reduced from 26 kg. per h.p. in 1900 to 4 kg. in 1905, 3 kg. in 1910 and 2.5 kg. in 1913. At the same time

fuel consumption was reduced from 500 to 225 gr. per h.p./hour. In this way the speed of the airship could be increased from 6.7 meters per second in 1900 to 11 meters per second in 1905, 16 meters in 1910 and 20—21 meters in 1911, while dynamic pressure to overcome excessive weight due to rain, change of temperature or loss of gas was nearly four times that of 1905. A vast increase in potential capacity.

At the same time the drives, propellers and all the other separate parts of the machinery were constantly being improved; the steering apparatus and stabilising wings, at first and for a long while a weak spot in the Zeppelin, were gradually improved until they formed effective and satisfactory machinery; the form of the whole ship was adapted more and more to modern aero-dynamic knowledge and confirmed by experience in the air. These improvements were spread over years, including the war and post-war years, until at last there developed the ship we now know and possess, the ship which, equal to any weather and good for any distance, had been conceived by the Count in quite early days and which could only be realised in the form of a rigid airship. But, already by 1911, the "Schwaben"

was so good a type of ship that she was able to rescue what had looked almost a lost cause.

I am inclined to think however that the "Schwaben" might not have achieved this, had not a "higher power" come to her aid, the wonderful summer of 1911. I can say this the more safely and without denying anyone his meed of praise, because I myself had undertaken the duty of piloting the "Schwaben."

As I have said, the pioneer flights of that day suffered not only from inadequate engine-power, but also from insufficient knowledge of weather phenomena. An organised meteorological service was still in the making and no one knew anything definite of the structure and disturbing elements of the atmosphere or of the laws governing the movement of a long airship within this element. All had to be learnt. That is why the ships were so often overtaken by sudden storms and squalls, by which they were carried up into the air, emptied of gas and forced down. Aerological stations, with pilot balloons for studying the higher as well as the lower air strata, hardly existed, and the Delag proceeded to establish a small-scale aerological service of its own. This service was gradually

extended, and so, little by little, the pilots became acquainted with vertical air-currents and other tricks of the air and learnt to master or avoid them. Then came that marvellous summer of 1911 with its three months of practically unbroken fine weather, a perfect godsend. No longer were flights daily exposed to the threat of weather disasters. For weeks and months our pilots flew in calm safety and began to understand and master the strange new element. Nature, who "hates man's handiwork," can at times be kind and gentle. But woe to him who disregards her warnings and grows incautious! It was caution which the "Schwaben" pilots learnt to exercise more and more as public confidence slowly returned. They could not risk losing it again. Thus good-fortune itself can teach us a lesson, provided we accept it humbly as such and, careful not to arouse the envy of the gods, do not take liberties with the forces of nature.

The "Schwaben" was able to carry out her flights under the happy auspices of a second friendly star: most of them were made from the hangar at Baden-Oos. This avoided or at any rate minimised a constant menace.

I mentioned as the third cause of accidents the inexperience in handling the ship on the ground and especially in bringing her in and out of the hangar. At Friedrichshafen injury was several times sustained in this way. At Düsseldorf the ship was bumped against a wall as she left the shed and seriously damaged. If there is a cross-wind or a wind blowing even slightly from one side, it is difficult and dangerous, sometimes impossible, to launch an airship. That was why Count Zeppelin constructed on Lake Constance his floating shed, which turned with the wind. The ideal for land-work is a revolving hangar, but that was not at that time feasible. We had to do our best with fixed hangars. These work well enough for trial flights from the building yard or for army practice work. For the flight can be postponed, if the wind is adverse. But it is scarcely possible for passenger flights. The travelling public arrives on time at the starting-point and demands a regular time-table. Risks are then taken against better judgment, in order that the airships may not appear unsuited for regular traffic. In consequence an undue risk will sometimes be taken and an accident will occur like that

at the Düsseldorf shed. This is the severest strain of all on a pilot's nerves and if, as was usually the case, his nerve failed after two or three years, it was due not to flights in bad weather, but to the uncertainties of the hangars.

And what was the plight of an airship which, on returning from a flight, could not be placed under shelter in the shed or which had to make a forced landing and lie out in the open? At Echterdingen and at Weilburg the ship had been caught by the storm, at Bülzig it had taken hundreds of soldiers to hold her down. Should she be attached by long or short ropes? Should she he held down by light weights, balanced weights, or with heavy weights on the ropes? Should she lie in the open fields or under the lee of a wood or of the hangar? All these and similar questions had to be answered. Count Zeppelin applied himself to them all. He knew the difficulties involved and, if in the early days an accident happened through inexperience, he would shield the unfortunate pilot with his authority, resting upon the respect and affection of the public, a kind paternal authority ever ready to comfort and encourage. I have never forgotten how after the

accident against the wall of the Düsseldorf shed, when we were 'gazing horrified at what we thought was the total destruction of his work, he came hurrying to the spot with words of comfort and told us not to blame ourselves, although it was his life-work that appeared to be endangered.

Such were the problems and difficulties attending the handling of the airship. What could the shed at Baden—Oos do to improve matters? Just this—that there was comparatively seldom any cross-wind at this shed. The prevailing wind is in the direction of the line of the Black Forest, which it follows. For this reason, and especially in this fine summer, it was almost always possible to launch and berth the ship without trouble. There was rarely any need to lie at anchor and, when there was, it was possible to gather useful experience under comparatively easy and favourable conditions.

The "Schwaben" was completed by the middle of June 1911. She had simple and effective steering-gear in the stern and was a bit shorter than the "Deutschland," thus making her easily dirigible. Above all, she had three engines, each of 150 h.p., which brought her speed up to 20 meters per

second. That was her most striking feature — at that time, indeed, a sensational one.

The adversaries of the rigid system, in Berlin, were at first incredulous. Differences of opinion between the supporters of the different systems for solving the problem of flight, had led at that time to some very heated exchanges. The feud between the "Rigids" and "Non-Rigids" was conducted with a fierceness before which the mediaeval antagonism of Guelph and Ghibelline pale into mere bickering! It must be admitted, I fear, that we at Friedrichshafen were not the less fierce combatants in this duel, for we were in trouble and disgrace, whereas the others at that time enjoyed a larger measure of official sympathy and encouragement. The creator of the non-rigid airship, Herr von Parseval, had spoken of the Zeppelin as the "flying pencil," referring to its great length as compared with its diameter. We replied by calling his type of ship, which only kept its shape by internal overpressure, the "puffed-up" system or "flying sausage." The intermediate form, the "semi-rigid" type used by the army, came off still worse, like all "cowardly" compromises, and the chief engineer of the army

building factory once complained humorously: "If you don't swear by 'rigid' or 'non-rigid,' but favour the 'semi-rigid' form, you're no longer merely a fool or an idiot, you're a scoundrel!"

The atmosphere, therefore, used to grow rather sultry, when enthusiasts for the rival systems occasionally met in Count Zeppelin's midst, and it often required all the old gentleman's charm of manner or a specially good bottle bought from the Echterdinger fund, to restore peace.

It was thus not without a small spice of mischief that the Count in his kindness invited Herr von Parseval to take part in a trial flight by the "Schwaben," so that he might judge for himself the vessel's speed. The invitation was readily accepted and the guest came, we must suppose, with the expectation, as the good mathematician that he was, of once again exposing the Zeppelin party as arithmetical ignoramuses. No doubt Herr von Parseval was at heart delighted at the progress made in airship construction, even if he did after the flight express himself rather unfortunately when he said, "Yes, there's no help for it; the ship does do 20 metres per second."

She did, indeed, do 20—21 metres per second,

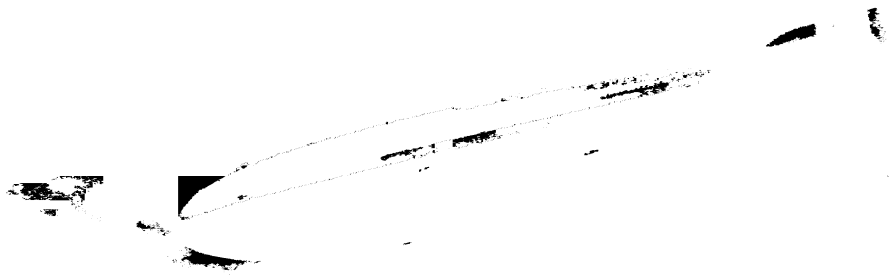
and thereby at last began to acquire a practical utility. During 1911 and 1912 she made altogether about 250 flights without a single accident. In 1912 and 1913 she was joined by further Delag airships, the "Viktoria-Luise," "Hansa" and "Sachsen" (some of them somewhat larger and more powerful still), which all helped to restore faith in the airship. By the autumn of 1911 the army had already received a new ship to replace the Z II destroyed at Siegen and in the spring of 1912 was delivered Z III, both more or less sister-ships of the "Schwaben." Even the navy, after long hesitation, began to show interest and in the autumn of 1912 obtained delivery of L I, a ship of rather larger dimensions than the army machines. Thus the Zeppelins were at last employed on that military work for which, as was soon to be proved, their type and capacity best fitted them.

The fight of the old Count for his ideas and his creation was now, so far as he himself was concerned, practically over. There were, it is true, occasional setbacks, hitches and disputes, but the remedy for these lay in the main with his technical staff and business managers. There was as yet no serious threat to his invention, for the value of his

airships was established and the astonishingly rapid progress in engine-building promised a rapid increase in their power. The really serious menace came later, from the aeroplane. But that did not arrive until death had released the old veteran from his cares and exertions. He himself survived to see his airships, which had started with a carrying capacity of a few hundred kilograms and a speed of 7 meters per second, grow during the war to gigantic machines carrying a load of 25,000 to 30,000 kg. and flying through the air at a speed of 31—32 metres per second and rising to altitudes of 5000 and 6000 metres. Even he, the optimistic visionary and builder, had scarcely dared to dream of this fulfilment of his work.

When war broke out, Count Zeppelin was 76. He had just begun to retire somewhat from active work and, after much pressure and rather reluctantly, was preparing to write his memoirs and, for the rest, to enjoy a peaceful, but honourably busy old age. He had, indeed, much to relate and much in which he was interested. But, with the call of war, he roused himself once more to full activity, burning to be of use to his country. He had hoped somehow and somewhere to be employed by the central

government. But the offer was not made, perhaps because it was thought that he was already fully occupied with his airships. But this was far from the case. He left the work mainly to his staff, knowing that it was in the best possible hands, and to the military and naval experts, who had their own ideas of the duties to be performed by airships. Count Zeppelin himself devoted his whole soul to general politics and strategy and thought more about the fate of Germany as a whole and of the possible outcome of the war than about his airships. He became once more the complete soldier — which inwardly he had always been, even while outwardly disguised as an engineer — and a soldier with all the conviction of the large-scale strategist. His war aims were on an ambitious scale and the only issue he contemplated was the utter defeat of Great Britain and France and that Germany should then fix the measures of security she thought necessary to protect herself against future attacks upon her life and liberty. Otherwise, even if the issue were indecisive, he foreshadowed sooner or later the inevitable collapse of the German nation. He was therefore in favour of the most ruthless and fullest employment of all methods of





war, holding, like Admiral Fisher, that the most ruthless warfare is at the same time the most humane.

He worked for and canvassed his war aims among a wide circle of friends and acquaintances and in this connection entered in 1916 into correspondence, ending in a dispute, with the Chancellor, von Bethmann-Hollweg. The conflict arose through the Count's belief that the Chancellor had prevented the unrestricted use or airships (and of submarines) against Britain. This was not quite in accordance with the facts, although it was no doubt true that, early in the war, certain restrictions had been imposed in some quarter upon air attacks against England, — restrictions for which the Chancellor was not responsible. Whether the Count's view that England, in the latter half of 1916, could and would have been brought to her knees by air attacks carried out by large squadrons in combination with unrestricted submarine warfare, was correct or not, it is impossible to say. By that time, the British defence against such attacks had perhaps already been made too strong. But one thing can be said: If at the beginning of the war there had been more and better airships — which, owing to Admiral von Tirpitz' low opinion of airships as

weapons of naval policy, there were unfortunately not — they would very probably have proved extremely dangerous to England. It speaks well for the Count's determination and complete objectivity that, at the same time that he was pressing for the greater use of airships, he also urged the construction of large bombing aeroplanes and set to work busily building the first large aeroplanes in his works at Staaken near Berlin.

Receiving a hint of a supposed wish of the Emperor and of an undesired weakening of the Chancellor's position, Count Zeppelin was persuaded slightly to modify his attitude on one point and to agree to the publication of his altered view in the press. He did so unwillingly, but was resigned, knowing that he would be misunderstood, but loyal and dutiful to the last.

Amid the throes of this conflict of opinion, which once again at the end of his career stirred his patriotic heart to the depths, Count Zeppelin's life of struggle and effort drew to its close. He fell ill with inflammation of the lungs, following upon an operation. After March 8th, 1917 his warning voice was heard no more. The "rest was silence."

"Now cracks a noble heart! Farewell, sweet prince,

And flights of angels sing thee to thy rest."

So Horatio would have said, here, too, had he been present at the death-bed.

Count Zeppelin was spared the sight of Germany's downfall, although his last days were darkened by heavy care and foreboding.

He did, however, live to see his work ripen to maturity just when Germany needed it and while there was still a short space of time in which to make use of it before it was overtaken by the development of war-time and aeroplane technique. All that the Zeppelins did during the war for the navy and thus for the cause as a whole is not perhaps well enough known to most people, but Count Zeppelin saw it all.

Unhappily he could not live to see his airships, as they grew in size, bridging the oceans and serving as instruments of the German will to rise again, peaceful ambassadors in the service of human culture. And that was the ideal with which he had started.